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Defining success : the Air Force information technology commodity council

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MBA PROFESSIONAL REPORT

Defining Success:
The Air Force Information Technology Commodity Council

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December 2005

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13. ABSTRACT (maximum 200 words)

The Department of Defense (DoD) is using industry best practices to transform the way it manages its acquisition functions to include its people, processes, practices, and policies. Strategic sourcing is one such process. The objective of strategic sourcing is the creation and application of carefully crafted procurement strategies to acquire various supplies and services at the lowest total cost. While numerous sourcing strategies exist (e.g., those for strategic items, leverage items, bottleneck items, and noncritical items), this study focused on leverage items and the use of commodity councils, specifically the Air Force Information Technology Commodity Council (AFITCC).

Using a case study approach, this research identified the specific factors that contributed to the successful development and implementation of AFITCC. These factors included the development of an overall sourcing strategy, the utilization of an appropriate commodity strategy, and the ability to implement change within an organization. Thus, by documenting specific challenges and successes, this research should help to guide the development and implementation of commodity councils throughout the Air Force, DoD, and various other public organizations.

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DEFINING SUCCESS: THE AIR FORCE INFORMATION TECHNOLOGY COMMODITY COUNCIL

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ABSTRACT

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LIST OF ABBREVIATIONS AND ACRONYMS

AF CIO:	Air Force Chief Information Officer
AF:	Air Force
AFAA:	Air Force Audit Agency
AFB:	Air Force Base
AFITC:	Air Force Information Technology Conference
AFITCC:	Air Force Information Technology Commodities Council
AFMC:	Air Force Materiel Command
BPA:	Blanket Purchase Agreement
CAMP:	Commodity Acquisition Management Plan
CICA:	Competition in Contracting Act
CIO:	Chief Information Officer
COTS:	Commercial-Off-The-Shelf
CSO:	Commodity Strategy Official
DoD:	Department of Defense
DPI:	Digital Printing and Imaging
E-mail:	Electronic mail
EOY:	End of Year
ESM:	Enterprise Spend Management
FAR:	Federal Acquisition Regulation
FSS:	Federal Supply Schedule
FY:	Fiscal Year
GPC:	Government Purchase Card
GSA:	General Services Administration
HQ SSG:	Headquarters Standard Systems Group
IBM:	International Business Machines
I/O:	Input/Output
IPMS:	Information Processing Management System
IPT:	Integrated Product Team

IT:	Information Technology
ITAMS:	Information Technology Asset Management System
LGC:	Contracting
MAJCOM:	Air Force Major Command
PC:	Personal Computer
PSC:	Product Service Code
QEB:	Quarterly Enterprise Buy
SAF/AQC:	Air Force Deputy Assistant Secretary (Contracting)
SAF/XC:	Warfighting Integration and Chief Information Officer
SB:	Small Business
SPS:	Standard Procurement System
TOC:	Total Ownership Cost
U.S.:	United States

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I. INTRODUCTION

A. BACKGROUND

The Department of Defense (DoD) is using industry best practices to transform the way it manages its acquisition functions to include its people, processes, practices, and policies.[1] Strategic sourcing is one such process. The objective of strategic sourcing is the creation and application of carefully crafted procurement strategies to acquire supplies and services at the lowest total cost.[2] While various sourcing strategies exist (e.g., those for strategic items, leverage items, bottleneck items, and noncritical items), this study focused on leverage items and the use of commodity councils, specifically the Air Force Information Technology Commodity Council (AFITCC).

AFITCC is responsible for the strategic planning for all Air Force (AF) commercial IT products and services. It develops centralized purchasing strategies that can be executed by decentralized units at the tactical level. Its primary objective is to create maximum value by leveraging the AF's significant buying power.

AFITCC's brief history and immediate success have certainly been well-documented. Since its inception, the Council has captured over $34 million in cost savings.[3] The AF's Deputy Assistant Secretary (Contracting) (SAF/AQC) has even christened AFITCC "the AF's premier commodity council."[4] Nevertheless, very little detailed documentation exists regarding the development and implementation of AFITCC. Consequently, no one really knows how or why AFITCC succeeded.

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[1] R. Rendon, Commodity Sourcing Strategies: Supply Management in Action," No. NPS-CM-05-003, (Monterey, CA: Naval Postgraduate School, 2005), 1.

[2] E. Gabbard, "Strategic Sourcing: Critical Elements and Keys to Success," paper presented at Institute of Supply Management International Conference, Scottsdale, AZ, 2004.

[3] K. Heitkamp, Interview by authors, Tape recording, Air Force Information Technology Commodity Council, Gunter Annex, Maxwell AFB, Montgomery AL, 15 September 2005.

B. LITERATURE REVIEW

DoD's procurement function is transforming from a transaction-oriented perspective to a strategic-oriented enterprise. Procurement is no longer perceived as a tactical, clerical, or administrative function. On the contrary, following the lead of various private entities, DoD has now recognized the importance of strategic sourcing in establishing direction, accomplishing goals, and impacting competitive advantage. As a result, DoD will further emphasize the criticality of its procurement function as it continues to acquire mission-critical and complex supplies and services.[5]

Strategic sourcing is a much broader concept than purchasing alone. It is a new way of operating. It involves internal operations and external suppliers to achieve advances in cost management, product development, cycle times, and total quality control. Strategic sourcing is also a progressive approach to managing the supply base that differs from traditional arm's-length, or adversarial, relationships with sellers. It instead pursues long-term, win-win relationships with specially selected suppliers. Furthermore, strategic sourcing includes identifying, evaluating, managing, and developing suppliers to realize performance superior than that of competitors. This requires the use of early cross-functional teams. Finally, strategic sourcing entails pursuing strategic responsibilities (i.e., those activities that have a large impact on an organization's performance).[6]

A commodity council is the organization responsible for implementing the commodity sourcing strategy. It consists of a cross-functional team that develops a centralized purchasing strategy (i.e., commodity sourcing strategies) for organization-wide requirements concerning specific commodity groups.[7] The major benefits of implementing a commodity council include leveraging organization-wide spending,

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[4] C. Williams, "Senior Leader Perspective Briefing," Slideshow: 28 October 2005.

[5] Rendon, 1.

[6] Ibid, 8.

[7] T. Reed, D. Bowman, & M. Knipper, "The Challenge of Bringing Industry Best Practices to Public Procurement: Strategic Sourcing and Commodity Councils, in *Challenges in Public Procurement: An International Perspective,* K. Thai et al., eds.*,* (Boca Raton, Florida: PrAcademic Press, 2005), 272.

reducing the complexity associated with the purchase of goods and services, and decreasing the overall administrative cost of purchasing.[8]

The development and implementation of a commodity council involves transforming a traditional purchasing function into a forward-leaning strategic sourcing organization. In doing so, management must be able to bring about meaningful change within the organization. Accordingly, while the AF's contracting community hurries to transform its people, processes, practices, and policies in an effort to increase its effectiveness and efficiency, it must not discount the importance of developing comprehensive change management strategies.

C. PROBLEM STATEMENT/RESEARCH OBJECTIVE

This research identifies the specific factors that contributed to the successful development and implementation of AFITCC. These factors include the development of an overall sourcing strategy, the utilization of an appropriate commodity strategy, and the ability to implement change within an organization. Thus, by documenting specific challenges and successes, this research should help to guide the development and implementation of commodity councils within the AF, DoD, and various other public organizations.

D. METHODOLOGY

For the purpose of this project, the research team utilized an exploratory case study methodology. Accordingly, the team employed a triangulation method to gather qualitative evidence. This required using multiple methods to gather and analyze data, including conducting group and individual interviews with original and current AFITCC members, reviewing AFITCC-provided and publicly-available documents, and identifying common patterns and themes among the various qualitative data gathered. All of the above led to a better understanding of the specific factors that led to the successful development and implementation of AFITCC.

[8] Reed, 273.

E. RESULTS

A background of AFITCC's origin is discussed to provide the reader with a brief explanation of why Headquarters Standard Systems Group (HQ SSG) was selected to implement AFITCC and who were the major stakeholders involved in the development and implementation process. It also discusses AFITCC's vision, guiding principles, and strategic objectives. The remainder of the chapter depicts AFITCC's development and implementation of a centralized purchasing strategy in accordance with Laseter's "Balanced Sourcing" approach.

The first three elements of Laseter's "Balanced Sourcing" approach document facts and provide a basis for decision making. They include the documentation of the amount of money spent on a commodity (i.e., spend), an industry analysis, and an explanation of cost and performance drivers. The second three steps represent the core of the commodity strategy. They are segmentation of supplier roles, business process priorities, and quantification of opportunity. The final element, action plan for implementation, is a translation of the strategy into a set of tactical initiatives to capture the opportunity.[9] It also entails sustaining the commodity strategy.

F. DISCUSSION

A deeper analysis of Laseter's "Balanced Sourcing" approach results in the identification of many successes and challenges AFITCC encountered during the development and implementation of its overarching and individual commodity strategies. Additionally, based on lessons learned, recommendations are presented to benefit future development, implementation, and sustainment of commodity councils throughout the AF and DoD. Furthermore, the successes and challenges are compared to a recent audit conducted by the Air Force Audit Agency (AFAA). Finally, limitations of the research are discussed and recommendations for future research are provided.

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[9] T. Laseter, *Balanced Sourcing: Cooperation and Competition in Supplier Relationships*, (San Francisco: Josey-Bass Publishers, 1998), 69.

II. LITERATURE REVIEW

A. CHAPTER OVERVIEW

This chapter provides an overview of existing strategic sourcing, commodity council, and change management research. It begins with a brief explanation of the transformation initiative within DoD, then thoroughly discusses strategic sourcing and its many applications, including the commodity council concept. The chapter concludes by defining change management and describing how purchasing managers can utilize change management concepts to transform the purchasing function into a strategic sourcing organization.

B. THE DOD TRANSFORMATION

Presented to Congress in October 2001, the President's Management Agenda revolutionized the way the federal government conducts its business. Federal departments and agencies began searching for processes by which they could become more efficient and effective. Their goal was to maximize the value of dollars budgeted in support of their organizations.[10] In response to the Agenda, Secretary of Defense Donald Rumsfield declared:

> Just as we must transform America's military capability to meet changing threats, we must transform the way the DoD works and what it works on…our challenge is to transform not just the way we deter and defend, but the way we conduct our daily business.[11]

DoD's procurement function is transforming from a transaction-oriented perspective to a strategic-oriented enterprise. Procurement is no longer perceived as a tactical, clerical, or administrative function. On the contrary, following the lead of various private entities, DoD has now recognized the importance of strategic sourcing in establishing direction, accomplishing goals, and impacting competitive advantage. As a

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[10] Reed, 272.

[11] "DoD Inspector General Starts Transformation Process," Department of Defense. (10 September 2002), <http://www.defense.gov/releases/2002/b09102002_bt461-02.html> (accessed 19 November 2005).

result, the DoD will further emphasize the criticality of its procurement function as it continues to acquire mission-critical and complex supplies and services.[12]

C. STRATEGIC SOURCING

1. Purchasing Versus Strategic Sourcing

Before diving into an in-depth discussion on strategic sourcing, a distinction must be made between purchasing and strategic sourcing. Purchasing is both a functional group (i.e., a formal entity on the organizational chart) and a functional activity (i.e., buying goods and services). The purchasing group performs many activities to ensure it delivers maximum value to the organization. Examples include but are not limited to identifying and selecting suppliers, negotiating, contracting, conducting market research, and developing purchasing systems.[13]

Strategic sourcing is a much broader concept than purchasing. It involves both internal operations and external suppliers to achieve advances in cost management, product development, cycle times, and total quality control. Strategic sourcing is also a progressive approach to managing the supply base that differs from the traditional arm's-length, or adversarial, relationship with sellers. It instead pursues long-term, win-win relationships with specially selected suppliers. Furthermore, strategic sourcing includes identifying, evaluating, managing, and developing suppliers to realize performance superior than that of competitors. This requires the use of cross-functional teams early in the process. Finally, strategic sourcing entails pursuing strategic responsibilities, those activities that have a large impact on an organization's performance.[14]

2. A Brief History of Strategic Sourcing

Specific recognition of purchasing's positive role in corporate strategy is relatively new. However, the central theme that has emerged from an examination of

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[12] Rendon, 1.

[13] R. Monczka, R. Trent, & R. Handfield, *Purchasing and supply chain management* (3rd ed.), (Mason, Ohio: Thomson/South-Western, 2005), 7.

[14] Ibid, 8.

previous research is that the image and status of purchasing is driven by the contribution of the purchasing function to the performance of the organization.[15]

Research published as recently as 1978 questioned the contribution made by purchasing to corporate performance.[16] The research demonstrated that, during a time of critical material shortages in 1973, purchasing functions neither moved to improve their role nor their impact on corporate strategy. Accordingly, throughout the 1970s, top management viewed purchasing as playing a relatively passive, administrative role in the business organization.[17]

It was not until the 1980s when the linkage between purchasing status and company performance was decisively established. Firms realized the impact purchasing could have on their competitive position, and they gradually shifted the role of purchasing from tactical to strategic.[18] Additionally, in 1983, Kraljic published what some consider the pioneer study in strategic purchasing. Kraljic fervently declared that companies could no longer allow purchasing to lag behind other departments in acknowledging and adjusting to worldwide environmental and economic changes.[19] As a result, Kraljic developed what is now known as the "Purchasing Portfolio Approach," which allows companies to develop specific sourcing strategies for any and all of their purchased items.

In the 1990s, competition grew fierce among rival firms; global companies captured more and more world market share from companies in the United States (U.S.); the rate of technological change was unprecedented; and worldwide purchasing organizations began using global data networks and the Internet to synchronize activities.

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[15] R. Carter, & R. Narasimhan, "Is purchasing really strategic?" *International Journal of Purchasing and Materials Management, 1996: 32*(1), 20.

[16] D. Farmer, "Developing Purchasing Strategies," *Journal of Purchasing and Materials Management*, 1978: 14, (3).

[17] D. Ammer, "Is Your Purchasing Department a Good Buy?" *Harvard Business Review*, (1974): 36-159.

[18] Carter, 20.

[19] P. Kraljic, "Purchasing must become supply management," *Harvard Business Review*, (1983): 61(5), 109.

More than ever, firms took a more coordinated view of managing the flow of goods, services, funds, and information from suppliers through end customers. Consequently, managers began to view strategic purchasing as a means to satisfy intense cost and other improvement pressures.[20]

Because manufacturers spend an average of 55 cents out of every dollar of revenues on goods and services, strategic purchasing today reflects a growing emphasis on the importance of suppliers.[21] Supplier relationships are shifting from an adversarial to a collaborative approach with selected suppliers. Practices such as supplier development, supplier-design involvement, the use of full-service suppliers, total-cost supplier selection, long-term supplier relationships, strategic cost management, integrated Internet linkages, and shared databases are now seen as commonplace.

3. Kraljic's "Purchasing Portfolio Approach"

Kraljic's "Purchasing Portfolio Approach" provides a useful tool for determining an appropriate sourcing strategy for a specific product or service.[22] It is based on the premise that a firm's sourcing strategy depends on two factors: the strategic importance of purchasing and the complexity of the supply market. The importance of purchasing is assessed in terms of the value added by the product line, the percentage of total purchase cost, and the product's impact on profitability. The complexity of the supply market is determined by scarcity of supply, changes in technology, availability of substitutes, barriers to entry, logistics requirements, and degree of competition within a specific market.[23]

Using the above criteria, top management classifies all of its procured goods and services into one of four specific categories, for each of which a specific sourcing strategy is appropriate (see Table 1). These categories and strategies include: strategic items (high purchasing importance, high supply market complexity), bottleneck items

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[20] Monczka, Trent, & Handfield, 23.

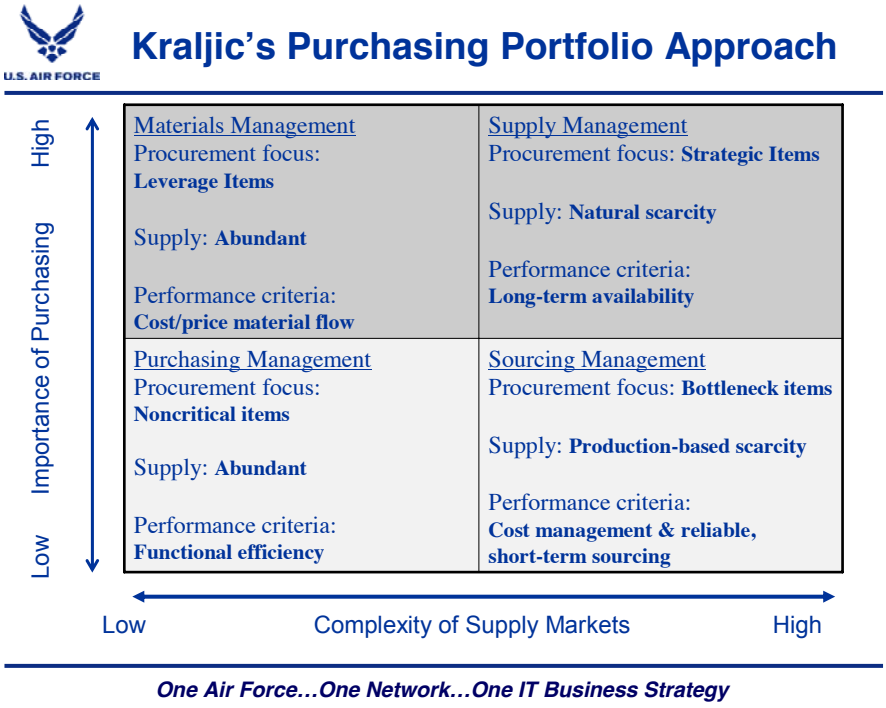
[21] Ibid, 6.

[22] Kraljic, 110.

[23] Kraljic, 110.

(low purchasing importance, high supply market complexity), leverage items (high purchasing importance, low supply market complexity), and noncritical items (low purchasing importance, low supply market complexity).[24]

Table 1. Kraljic's Purchasing Portfolio Approach (After: Kraljic)



Strategic items require extensive industry and risk analyses, price forecasting, long-term agreements, and collaborative relationships. Additionally, the procurement strategy may include a supplier certification process for monitoring a supplier's performance and promoting continuous improvement.[25] Sourcing strategies for bottleneck items entail specific market analysis. Proactive contract management, reliable product delivery, and adequate product inventory are also necessary.[26] Procurement strategies for leverage items should exploit the purchasing company's buying power to

[24] Kraljic, 112.

[25] Rendon, 9.

[26] Kraljic, 112.

negotiate desirable contract terms and conditions as well as take advantage of volume discounts. The strategy requires optimizing the supply base, pursuing price reductions, and insisting on low to zero inventories.[27] For noncritical items, simple market analyses, inventory optimization, and product standardization programs are appropriate. Efficient purchase order processing is also beneficial.[28]

The result of the "Purchasing Portfolio Approach" is that any organization, even DoD, can successfully develop and implement sourcing strategies appropriate to the specific category of goods or services being purchased. It is important to note, however, that sourcing strategies are very dynamic. Changes in supply or demand patterns can quickly alter an item's strategic classification. Therefore, the approach requires constant observation and regular updating.[29]

D. COMMODITY COUNCIL CONCEPT

Kraljic's "Purchasing Portfolio Approach" provides managers with a model to assess the strategic importance of purchasing as well as the complexity of the supply market and then develop accurate sourcing strategies. One such method, the commodity sourcing strategy, results when organizations deal with products or services appropriately classified in Kraljic's leverage quadrant.

The creation of a commodity council is one method of implementing a commodity sourcing strategy. The commodity sourcing strategy includes establishing centralized contracts that are then executed by decentralized units at the tactical level. The objective is to create maximum value by leveraging the organization's buying power. A commodity council is the organization responsible for developing the commodity sourcing strategy. It consists of a cross-functional team that develops a centralized purchasing strategy for organization-wide requirements concerning a specific commodity group.[30] It is important to note, the term "commodity" refers to categories or groups of

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[27] Rendon, 9.

[28] Kraljic, 112.

[29] Rendon, 9.

[30] Reed, 272.

supplies or services. It does not imply an expendable or non-complex item.[31] The success of a commodity council relies on seasoned commodity experts assigned to the council that make knowledgeable sourcing decisions about commodities. This equates to cost savings, well-established supplier relationships, and meeting or exceeding enterprise-wide requirements.[32]

The major benefits of implementing a commodity council include leveraging organization-wide spending, reducing the complexity associated with the purchase of goods and services, and decreasing the overall administrative cost of purchasing.[33] Firms enhance their bargaining power by utilizing fewer, centralized contracts to procure specific items and services in larger quantities. This results in discounted prices and increased efficiencies throughout the purchasing process. When a purchasing organization awards multiple contracts for a single item or service, contract administration becomes much more complex and costly. Therefore, reducing the number of contracts is much more efficient. In addition to being costly, managing multiple contracts with numerous suppliers for the same item or service is also extremely time-intensive. Through the use of centralized contracts, personnel can spend more time on critical areas such as strategy-making, forecasting, and supplier development and less time on areas such as purchase order processing and contract administration.

1. Examples from Industry

When discussing the employment of the commodity council concept, nearly all supply chain professionals and procurement managers agree International Business Machines (IBM) is one of the most successful examples to date.[34] In 2003 alone, IBM saved $5.6 billion due to its efforts to become more responsive to partners and customers

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[31] Rendon, 10.

[32] Reed, 273.

[33] Reed, 273.

[34] N. Radjou, "IBM Transforms Its Supply Chain To Drive Growth," March 24, 2005, <http://www-1.ibm.com/services/us/bcs/pdf/ibm-transforms-supply-chain-to-drive.pdf> (accessed 22 November 2005), 2.

throughout its supply chain.[35] As part of its supply chain transformation, IBM created 33 commodity councils responsible for general, systems production, and technology group procurement. It also reduced its supply base from hundreds of thousands to less than 33,000. Today, IBM leverages almost 100 percent of its spending compared to a mere 45 percent prior to 1995.[36]

Cessna Aircraft Company provides another example of the successful application of the commodity sourcing strategy. Representatives from departments such as supply chain, quality engineering, finance, and product support comprised seven cross-functional teams to meet the strategic objectives of the company. These teams reduced Cessna's supply base from 3,000 to 132. They also created a model for measuring the suppliers based on growth, provision, and phase-out.[37] In doing so, Cessna leveraged its spending, reduced administrative costs, and reduced the complexity associated with working with multiple suppliers.

2. Laseter's "Balanced Sourcing" Model

Executing commodity strategies requires a thorough and well-planned process. Literature indicates firms use a variety of methods to implement these strategies, but all of them tend to include the same basic fundamentals. Laseter defines these fundamentals in a seven-step process called "Balanced Sourcing." These steps consist of: (1) Organizational spend analysis; (2) Industry analysis; (3) Cost and performance driver determination; (4) Supplier role analysis; (5) Business process alignment; (6) Savings opportunity measurement; and (7) Execution plan.[38]

Spend analysis involves identifying the total ownership cost (TOC) of all goods and services currently purchased as well as those forecasted to be purchased in the future. TOC is the present value of all costs related to the good, service, or equipment incurred

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[35] A. Field, "New thinking at IBM," *Journal of Commerce*, (2005): 1.

[36] D. Smock, "Best Practices Past Big Blue Three Years Later," *Purchasing*, (2002): 131 (2), 11.

[37] S. Avery, "Cessna Soars," *Purchasing,* (2003): 132, (13), 25.

[38] T. Laseter, *Balanced Sourcing: Cooperation and Competition in Supplier Relationships*, (San Francisco: Josey-Bass Publishers, 1998), 69.

over its projected life.[39] Porter's "Five Forces Model" is an excellent strategic tool for conducting an in-depth industry analysis. The model provides the sourcing organization with a picture of the industry landscape and dynamics among competitors, suppliers, customers, potential entrants, and substitutes.[40] Measuring suppliers' cost and performance drivers is yet another significant step in the process. Cost is always a critical factor when evaluating suppliers. However, quality, technology levels, timeliness, and flexibility must also be considered.[41] The purpose of the supplier role analysis is to categorize supplies or services across a set of distinct supplier responsibilities. This enables the purchasing organization to determine not only the type and number of suppliers needed, but also the role they will play in supply management. Business process alignment ensures the purchasing organization's business processes are properly adjoined, prioritized, and integrated. The focus of the alignment process is to utilize supplier role and cost driver analyses to achieve a higher degree of integration with specially selected suppliers. The result is a much more cooperative relationship.[42] Savings quantification is a means of calculating the number of dollars saved. This key step also serves as a means to measure progress and secure top management support.[43] The final step of the "Balanced Sourcing" approach is the execution of the plan. This step describes how the team will communicate the plan, including the necessary activities, resources, and milestones, to accomplish the overall objective of the commodity strategy.

3. AF Commodity Council Implementation

The AF's commodity council approach is based upon the same premise as Laseter's "Balanced Sourcing" model for commodity sourcing strategies. See Figure 1 for a comparison of the AF's commodity council approach to Laseter's "Balanced Sourcing" model. In the AF model, the eight steps include: (1) Commodity purchase

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[39] Rendon, 10.

[40] M. Porter, "How Competitive Forces Shape Strategy," *Harvard Business Review*, (1997): 364.

[41] Rendon, 11.

[42] Laseter, 77.

[43] Laseter, 82.

analysis; (2) Industry/market analysis; (3) Future demand and spend forecast; (4) Future strategy development; (5) Strategy approval and communication; (6) Contractual vehicle development; (7) Strategy implementation; and (8) Monitor and continue improvement.[44]

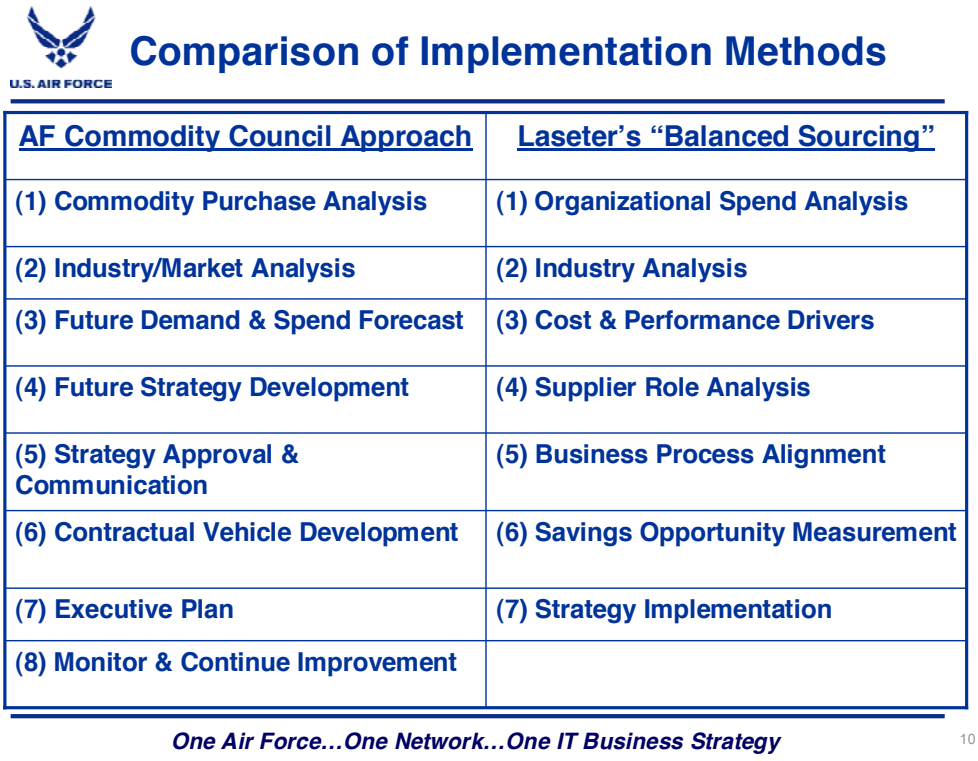

Figure 1. AF Commodity Council Approach Versus Laseter's "Balanced Sourcing" Model (After: Kelly, A. "Commodity Council Implementation and Operations." AFLMA Final Report No. LC200328804. Maxwell AFB AL: Air Force Logistics Management Agency. 29 December 2003. <http://www.aflma.hq.af.mil/lgc/lgccomplete.html> (accessed 18 November 2005 and Laseter)

The first step focuses on a spend analysis of the current commodities being purchased. It then identifies key stakeholders, recognizes potential challenges, and benchmarks industry leading standards. In the second step, the commodity team determines the suppliers' major cost drivers. The team also conducts a thorough industry analysis to assess the collective strength of the competitive forces within a specific

[44] "Air Force Policy Directive 63-19: Commodity Councils," (Washington, D.C., 2004), 12.

market or industry. Step three requires forecasting future demands against the current cost drivers. Once accomplished, the commodity team calculates the spend projections. The team compares spend projections with the various supplier roles in step four. Individual and overarching commodity sourcing strategies are then produced to meet the team's goals.[45] Once the commodity team achieves a consensus among its stakeholders, the fifth step is approving the commodity sourcing strategies. The contractual workload must also be allocated during this step. Step six involves issuing requests for proposal to prospective suppliers, analyzing the proposals, negotiating the terms and conditions of the contract, selecting a supplier, and, finally, awarding the contract. The time it takes from approval of the strategy to award of a contract varies from 60 days to 6 months. The length of time required for establishing the contractual instrument depends on several factors, including but not limited to commodity complexity, vendor responsiveness, stakeholder involvement, and strategy details.[46] In step seven, the commodity team communicates the implementation strategy to its stakeholders, trains and educates customers, transitions from previous suppliers, and, lastly, executes the new strategy and contract.[47] The eighth and final step of the AF commodity council implementation process requires collecting feedback from stakeholders and suppliers in an effort to vigorously improve processes. The commodity council strategy is a living document that team members must constantly monitor for continuous development.

4. AFITCC and Beyond

Using its eight-step commodity sourcing strategy, the AF implemented AFITCC in 2003. The council identified the top three configurations for the purchase of computer desktops and laptops. To date, the AF claims AFITCC is a complete success, and the AF

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[45] A. Kelly, "Commodity Council Implementation and Operations," AFLMA Final Report No. LC200328804, Maxwell AFB AL: Air Force Logistics Management Agency, 29 December 2003, <http://www.aflma.hq.af.mil/lgc/lgccomplete.html> (accessed 18 November 2005).

[46] Ibid, 32.

[47] Ibid, 33.

is in the process of developing commodity sourcing strategies for medical services, force protection, office supplies, aircraft landing gears, aircraft engines, aircraft accessories, and support equipment.[48]

It is important to note, however, that success is defined differently in the public and private sectors. The private sector defines success using profit margins, earnings ratios, and stockholder dividends. In contrast, the public sector is not driven by profits. Instead, it must concern itself with regulation, socio-economic goals, and countless grappling stakeholders.[49] As a result, measuring the success of a commodity council in the public sector is not as simple as it might seem. Cost savings are important, but they are certainly not the only factor.

Excellence in the areas of strategic sourcing and commodity strategies does not happen by accident. Managers must not neglect the importance of change management and organizational design. Effective change management and organizational design promote the attainment of strategic sourcing objectives and affect the success of purchasing as well as the entire organization.

E. EMERGING DEFINITION OF CHANGE MANAGEMENT

Transforming the goals and operations of an organization is a complex process. In fact, many experts proclaim the primary reason for failure in major change initiatives is the lack of change management. Accordingly, when converting traditional contracting activities to those involved in strategic sourcing and commodity councils, it is imperative management understands what is required to implement change.

Change management literature is comprised of two generally accepted views. One is the engineer's approach to improving business performance, and the second is the psychologist's approach to managing the human aspect of change.[50] The first is a mechanical focus, while the latter is a human focus.

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[48] Rendon, 23.

[49] Reed, 277.

[50] J. Hiatt, Change Management Learning Center (1996-2005), <http://www.change-management.com> (accessed 19 November 2005).

The mechanical system perspective focuses on observable and measurable business elements that can be changed or improved. These elements include business strategies, processes, systems, organizational structures, and job roles. From this perspective, change can occur gradually or radically. As a gradual means, Deming introduced the notion of continuous process improvement, such as Six Sigma and Total Quality Management.[51] Meanwhile, Hammer advocated radical changes through business process reengineering.[52] Historically, companies embracing the "engineering" perspective did not utilize change management concepts until they encountered a problem during implementation. Even after such a realization, many organizations continued to discount the benefit a sound framework could provide to those actively managing change. Advocates of the engineering approach tended to isolate the 'people' problem and then eliminate it or design a quick fix. Thus, problems with change implementation were viewed as a mere bump in the road.[53]

On the other end of the spectrum, psychologists are concerned with observing how humans react to their environment. Since humans are constantly exposed to change, the focus is on how individuals react to such change. When considering a transformation effort, Bridges stresses the importance of differentiating between change and transition. According to his theories, change is situational, while transition is psychological. A situation calls for a particular action, such as reorganizing the roles of teams or revising a plan. In contrast, the psychological aspect looks at the process people go through as they internalize and come to grips with the impact of the change.[54] Similarly, Duck determined that change is fundamentally about feelings. She insists that "managing people is managing feelings."[55]

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[51] D. Schwinn, (2003), <http://www.qualityadvisor.com/library/six_sigma/deming_six_sigma3.htm> (accessed 19 November 2005).

[52] M. Hammer, & J. Champy, "*Reengineering the corporation: A Manifesto for Business Revolution,*" (Great Britain: Nicholas Brealey Publishing, 1999).

[53] Hiatt.

[54] W. Bridges, "*Managing Transitions,*" (Cambridge, MA: Persues Group, 1980), 11.

[55] J. Duck, "Managing Change: The Art of Balancing," *Harvard Business Review* (2000)*:* 113.

Modern-day scholars of business transformation agree that solely applying either of these two theories is imprudent. An exclusively "engineering" approach to business issues or opportunities results in effective solutions that are rarely effectively implemented. Conversely, a predominantly "psychologist" approach results in a business being receptive to new things but lacking an appreciation or understanding for what specific changes must occur for the business to succeed.[56] As a result, these two schools of thought have merged.

1. Change Management Implementation Models

The key to incorporating both aspects of change management is gaining an appreciation of each perspective prior to implementing change. Based on previous research from numerous studies of successful and unsuccessful firms, scholars have developed various techniques to help guide managers through the implementation process. Achieving a balance between the two previously discussed approaches is common to each of the recommended techniques. Therefore, regardless of the specific model used, managers must progress through a series of key steps when implementing drastic change or a complete organizational transformation.

First, the organization must perform an environmental analysis. The analysis includes the examination of external factors such as political, economic, social, and technological trends.[57] A sense of urgency is established as a result of this assessment as well as the exploration of other market and competitive realities. In the midst of a crisis, it is not difficult to convince an organization that change is necessary. However, when the need for action is not generally understood, creating a sense of urgency is critical to rallying an organization behind change.[58] In addition, Kotter suggests forming a task force to lead the change effort.[59]

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[56] Hiatt.

[57] N. Roberts, Unpublished note on Organizational Systems Framework, 2003.

[58] R. Kanter, B. Stein, & T. Jick, *The Challenge of Organizational Change,* (New York: Free Press, 1992), 383.

[59] J. Kotter, "Leading Change: Why Transformation Efforts Fail," *Harvard Business Review* (2000)*:* 60.

Before implementing change, the task force must help the organization create a shared vision and common direction. Strategic objectives must be developed to not only help achieve that vision, but also empower other members of the organization to act on them. Also, the organization's mandate, mission, and values must be clarified as part of this direction-setting process.[60]

After defining the goals and strategic intent of the organization, the team must carefully consider the company's design factors. To do this, the organizational team needs to redefine even the most basic tasks. It is necessary for the activities in the work flow to be coordinated across work units. It is also imperative the motives, expectations, mindsets, knowledge, skills, and abilities of the people are understood.[61] In addition, obstacles to change, such as resistant employees and antiquated technologies, must be resolved. If warranted, new technologies that promote a more effective work environment should be pursued.

As part of the design factors, the structure of the organization must also endure heightened inspection. The systems or structures that seriously undermine the vision must be changed.[62] This may result in a complete overhaul to the organizational structure or simply a re-evaluation of the division of labor.[63] Beer, Eisenstat, and Spector emphasize the importance of creating an avenue of communication throughout each and every level of the organization.[64] No matter what kind of structural change is required, managers must align the way the work will be accomplished with the strategic direction.

The subsystems must also be examined. The processes of communicating, gathering information, and making decisions must be clear. The financial management processes should be observed for resource accountability. It is also important to know

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[60] Roberts.

[61] Ibid.

[62] Kotter, 60.

[63] Roberts.

[64] M. Beer, R. Eisenstat, & B. Spector, "Why Change Programs Don't Produce Change," *Harvard Business Review,* (1990)*:* 9.

how the acquisition and contracting processes operate.[65] Within the human resource management department, hiring, promoting, and developing employees who can implement the vision are absolutely necessary. Furthermore, the firm should recognize and reward employees involved in improvements. Kotter takes this idea one step further, recommending the organization "plans for and creates short-term wins."[66] When people visibly see results, even if only minor accomplishments, they gain a greater feeling of intrinsic self-worth and a stronger belief in their contributions to the company.

At this point, if the change process has been properly performed, then individual employees will gain an internal drive and motivation that will eventually surface as one of elements of the organization's new culture. Kotter defines this as the connection between the new behaviors and corporate success.[67]

The final step of the transformation process is one that does not get nearly enough attention. It is imperative the organization monitors and adjusts strategies in response to any problem that may arise as a result of the desired change.[68] This requires the development of a method to ensure consistent leadership as well as adequate procedures for inevitable turnover.[69] Identifying methods for measuring success is also critical to this last stage of the process.

2. Change Management within the Strategic Sourcing Organization

Strategic sourcing scholars, Monczka, Trent, and Handfield, are no strangers to the standard phases of change management. Using research regarding successfully transforming an organization, they developed the four pillars of purchasing and supply chain excellence, as described in Figure 2.

In the model, the guiding philosophies and business requirements are the foundation of all supply chain activities. They relate to areas such as globalization,

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[65] Roberts.

[66] Kotter, 60.

[67] Kotter, 60.

[68] Beer, Eisenstat, & Spector, 10.

[69] Kotter, 60.

customer responsiveness, and supply chain integration, and they affect each of the systems, skills, structures, and metrics required. The four enablers are capable human resources, proper organizational design, real-time and shared information technology (IT) capabilities, and adequate measuring systems. The enablers support the development of the strategies and approaches.[70] By successfully employing these enablers, the strategies and approaches will not only align with the organization's philosophies and requirements but also support the attainment of purchasing, supply chain, and organizational objectives and strategies.[71]

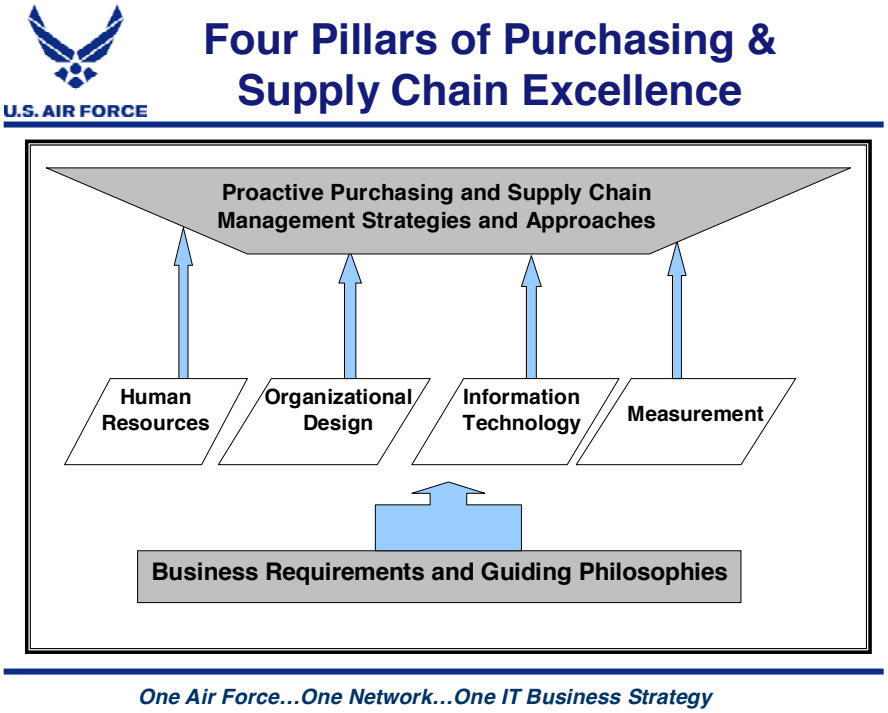

Figure 2. Four Pillars of Purchasing and Supply Chain Excellence (After: Monczka, Trent, & Handfield, 7)

The goal of the first enabler is to ensure the organization has capable people. Supply chain professionals must possess certain knowledge and skills. They must have the ability to "view the supply chain holistically, manage critical relationships,

[70] Monczka, Trent, & Handfield, 17.

[71] Ibid, 16

understand the business model, engage in fact-based decision making, practice advanced cost management, and understand electronic business systems."[72]

The next enabler is a well-conceived organizational design. The organization must be structured properly to achieve purchasing objectives. Effective organizational designs should feature the following: centrally led supply teams, executive responsibility for coordinating purchasing and supply chain activities, collocation of supply personnel with internal customers, cross-functional teams to manage supply chain processes, supply strategy coordination and review sessions, and an executive buyer-supplier council.[73]

Because technology is constantly changing, real-time and shared IT is the third enabler. It is essential organizations constantly scan the environment for the most current and best available means of conducting business. The latest revelations in the IT arena have been the development of supply chain planning and supply chain execution software. Planning software seeks to improve forecast accuracy, optimize production scheduling, enhance customer satisfaction, and reduce working capital costs and cycle times. Execution software helps obtain materials and manage the flow from suppliers through distribution to customers to ensure they receive the right products at the right place, time, and cost.[74]

As is the case with any change effort, measurement is the last required step toward a successful transformation. Measurement allows management to quantify whether or not value has been achieved. Finally, while measuring internal factors is important, managers should also appraise the entire supply chain and logistical processes.[75]

F. CHAPTER SUMMARY

While the AF's acquisition community hurries to transform its people, processes, practices, and policies in an effort to increase its effectiveness and efficiency, it must not

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[72] Monczka, Trent, & Handfield, 17.

[73] Monzcka, Trent, & Handfield, 16.

[74] Ibid, 18.

[75] Ibid, 19.

discount the importance of developing accurate sourcing strategies and comprehensive commodity strategies, as well as embracing change management. The successful development and implementation of commodity councils throughout the AF, and inevitably DoD, will require that leadership utilize all three concepts. Transformation is often a painstaking process. It normally does not occur quickly, and it does not occur at all if leadership cannot convince its personnel that it is necessary.

The information gathered and presented in the following pages considers AFITCC's development and implementation of a commodity sourcing strategy as well as how it contended with the challenges associated with the change management process. The ultimate intent of the research is to provide the AF and DoD with a more in-depth analysis of the critical factors that led to AFITCC's successful transformation.

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III. METHODOLOGY

A. CHAPTER OVERVIEW

The purpose of this chapter is to describe the research objectives as well as the methods used throughout the study. Specifically, it will discuss the exploratory case study methodology used to develop the research design, collect evidence, generate questions, ensure reliability/validity, and, finally, analyze the evidence.

B. RESEARCH OBJECTIVES

In August 2003, AFITCC awarded its first contract for $7.5 million to Dell, Inc. for the purchase of 12,500 computers. So potent was its buying power that AFITCC was able to purchase 2,500 computers more than it had originally planned.[76] Again in December 2003, AFITCC members utilized their collective buying power to purchase 14,863 desktop and 763 laptop computers for three different AF Major Commands (MAJCOMs). By leveraging its spend, AFITCC saved the commands over $4 million.[77]

Unfortunately, beyond the immediate cost savings AFITCC has captured, very little has been said about its successful transformation from a traditional purchasing agency to a progressive strategic sourcing organization. Senior leadership, service members, and taxpayers understand AFITCC saves money. However, very few are privy as to how or why? Consequently, the objective of this research project is to identify the specific factors that led to the successful development and implementation of AFITCC. These factors include the development of an overall sourcing strategy, the utilization of an appropriate commodity strategy, and the ability to implement change within an organization. As a result of the above, the research will provide detailed guidance for the development and implementation of commodity councils throughout the AF, DoD, and various other public organizations.

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[76] T. Temin, "Air Force Council Saves on First PC Buy," 27 August 2003, <http://www.gcn.com/vol1_no1/daily-updates/23299-1.html> (accessed 20 November 2005).

[77] Air Force Link, "Council Saves Major Commands Money," 12 September 2003, <http://www.af.mil/news/story.asp?storyID=123006166> (accessed 20 November 2005).

C. RESEARCH DESIGN

Yin defines a case study as an empirical inquiry that investigates a recent phenomenon within its real-life context. Yin suggests that a case study methodology is most appropriate when a "what," "how," or "why" question is being asked about a contemporary set of events over which the researcher has little or no control. Finally, Yin asserts the case study's unique strength is its ability to sort through a full variety of evidence, including but not limited to documents, artifacts, interviews, and observations.[78]

Zikmund describes exploratory research as initial research conducted to define the nature of the problem, diagnose a situation, screen alternatives, and discover new ideas. It provides qualitative data resulting in a greater understanding of a concept or problem. It does not involve rigorous mathematical analysis. The focus of exploratory research is therefore not on numbers but on words and observations, such as stories, visual portrayals, meaningful characterization, interpretations, and other expressive descriptions.[79]

Based on the above, an exploratory case study is the appropriate methodology for this project. First and foremost, the research team was interested in how and why AFITCC prospered, and specifically what factors were critical to its successful development and implementation. Second, strategic sourcing, commodity strategies, and AFITCC are all contemporary, real-life events. Third, while reviewing documents, examining artifacts, conducting interviews, and observing events, the team collected critical qualitative data. In doing so, the team was careful not to influence the behaviors of AFITCC members in any manner. Lastly, by conducting exploratory research and collecting qualitative data, the team told AFITCC's story thereby conveying how the council members accomplished such a tremendous feat.[80]

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[78] R.Yin, *Case study research design and methods* (2nd ed.), (Thousand Oaks: Sage Publications, 2003), 8-13.

[79] W. Zikmund, *Business research methods* (7th ed), (Mason, Ohio: Thomson/South-Western, 2003), 110-111.

[80] Air Force Link.

D. EVIDENCE COLLECTION

To better understand the specific factors that led to the successful development and implementation of AFITCC, the research team employed a triangulation method to gather evidence. This required using multiple methods to gather and analyze data in order to enhance validity.[81] Accordingly, the team conducted group and individual interviews with four of the original AFITCC members. In addition, the team reviewed critical AFITCC documents. Finally, the team requested information from five MAJCOM/Functional representatives.

The group interview promoted a much more flexible configuration as well as a comprehensive discussion than a typical question-and-answer session. The primary advantages of this exploratory technique include length of time to conduct interviews, low cost, quick turn-around of results, and ease of execution.[82] Follow-up interviews with individuals permitted the research team to clarify and further investigate issues that arose during the group interview. As a result, the triangulation method not only strengthened the reliability but also the validity of the information gathered.[83]

E. QUESTION DEVELOPMENT AND INTERVIEW PROCESS

Using many of the concepts, models, and theories presented in the literature review, the research team drafted an initial set of more than fifty questions. The team then met with subject-matter experts, discussed the questions, and determined the focus of the study needed to be narrowed. As a result of the meeting, the team agreed that Laseter's "Balanced Sourcing" approach would best meet the demands and scope of the study. Laseter's "Balanced Sourcing" approach was selected because it encompassed principles from strategic sourcing, commodity strategies, and change management.

Next, the research questions were revised and reviewed again from the perspective of Laseter's framework. Once finalized, the question topics were sent via

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[81] J. Fray & A. Fontana, "The Group Interview and Social Research," in *Successful Focus Groups: Advancing the State of the Art,* D. Morgan (ed), (New York: Sage Publications, 1993), 24.

[82] Ibid, 117.

[83] D. Morgan, *Focus Groups as Qualitative Research*, (Sage Publications, 1988), 31.

electronic mail (e-mail) to the original AFITCC members located at Gunter Annex, Maxwell Air Force Base (AFB), Alabama. The topics included documentation of the spend, industry analysis, explanation of cost and performance drivers, segmentation of supplier roles, business process priorities, quantification of opportunity, action plan for implementation, and sustainment. Only the topics were forwarded to prevent the members from collaborating prior to the interviews.

At the onset of the group interview, the research questions were provided to each of the interviewees. Please see the Appendix for a list of the research questions and associated topics. The group interview consisted of a facilitator, two scribes, three original members, and one current member of AFITCC. It was conducted in a conference room where AFITCC is located and lasted approximately two hours. Upon its completion, the team reviewed the interview for the purpose of clarification and subsequent questions.

The following day, the research team met individually with two of the three original AFITCC members who participated in the group interview. Using the process described in the previous paragraph, the team clarified any ambiguities and sought out additional information pertinent to the study. One interview was conducted in the same conference room as the previous day, while the other was conducted in the member's office. Each interview lasted approximately one hour.

Lastly, the research team interviewed one final member of the original AFITCC, who was not available for the group interview. The research questions were provided to him prior to the interview. The interview was conducted using the same process as described in the previous two paragraphs. The interview was accomplished in the individual's office, and it lasted one hour and thirty minutes.

The group interview was video-taped and digitally recorded. The individual interviews were digitally recorded. A copy of the recordings may be requested from the authors.

F. RELIABILITY/VALIDITY

According to Yin, three tests are frequently used to establish the quality of any empirical research, including the exploratory case study. They are construct validity, external validity, and reliability. Yin defines construct validity as "establishing correct operational measures for the concepts being studied." External validity is "establishing the domain to which a study's findings can be generalized." And reliability is "demonstrating that the operations of a study can be repeated with the same results."[84]

To ensure construct validity, Yin recommends using multiple sources of evidence, establishing a chain of evidence, and having key informants review the draft case study report. To establish external validity, a researcher must replicate his or her findings in subsequent, similar studies. Finally, to address reliability, Yin suggests using case study protocol and developing a case study database.[85]

In order to increase construct validity, the research team collected information from multiple sources including group and individual interviews as well as AFITCC-provided documentation. Additionally, subject-matter experts reviewed the interview questions to ensure accuracy. Finally, by writing and publishing this professional report, the team established a chain of evidence for future research.

To enhance and facilitate reliability, the researchers used a team approach to analyze data. Each team member independently reviewed and interpreted the data. Minor disagreements were then resolved by reviewing the transcripts and identifying the source of disagreement. Additionally, the accuracy of the interpretive analysis was significantly improved because all three research team members were deeply involved with data gathering.[86] Lastly, the team maintained a case-study database consisting of the digital recordings of the group and individual interviews as well as the corresponding working papers.

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[84] Yin, 33.

[85] Ibid, 35-37.

[86] Morgan, *Focus Groups as Qualitative Research,* 50.

G. EVIDENCE ANALYSIS

Due to the qualitative nature of the data gathered during the group and individual interviews, a considerable amount of subjective judgment is involved in their interpretation and analysis. Researchers must not take every statement at face value. Instead, statements can and should be scrutinized within the framework of the broader discussion and in light of information available from other sources. This provides the research team with valuable insight that cannot be gained elsewhere.[87] The ultimate goal is to treat the evidence fairly, to produce compelling analytic conclusions, and to rule out alternative interpretations.[88]

Seidel and Clark state the analysis of data gathered from interviews can be broken into two basic parts: mechanical and interpretative. The mechanical component requires the researcher to organize and subdivide the data into smaller, more meaningful segments. The interpretative facet entails establishing criteria for organizing data into analytically useful subdivisions. It also involves drawing practical and meaningful conclusions from the ensuing search for patterns within and between the subdivisions.[89]

After performing several meticulous examinations of the interviews conducted, notes taken, and impressions gained, the research team divided the data into mechanical and interpretative segments. In doing so, the team identified common patterns and themes. It also verified the data gathered by comparing it to documentation provided by AFITCC. It is important to note, the documentation provided by AFITCC corresponded closely with the information collected during the group and individual interviews.

H. CHAPTER SUMMARY

This chapter described the research objectives of this study. It also described the exploratory case study methodology employed to develop the research design, collect

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[87] J. Knodel, "The Design and Analysis of Focus Group Studies: A Practical Approach," in *Successful Focus Groups: Advancing the State of the Art,* D. Morgan (ed), (New York: Sage Publications, 1993), 43-44.

[88] Yin, 102-103

[89] J. Seidel & J. Clark, "The Ethnograph: A Computer Program for the Analysis of Qualitative Data," *Qualitative Sociology*, (1984), 110-125.

evidence, generate questions, ensure reliability/validity, and, finally, analyze the evidence. The next chapter discusses the results and findings of the research.

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IV. RESULTS

A. CHAPTER OVERVIEW

This chapter summarizes the results and findings of the investigation conducted during the research team's visit to AFITCC. After presenting a brief background of AFITCC's origin, this chapter depicts its transformation process via Laseter's seven-step "Balanced Sourcing" approach.

B. BACKGROUND

On 21 July 2003, SAF/AQC and the Air Force Chief Information Officer (AF CIO) partnered with HQ SSG, Maxwell AFB-Gunter Annex, Alabama, to establish AFITCC. HQ SSG was selected by the AF CIO and SAF/AQC to head the newly formed AFITCC because, according to the Director of the Council, "the IT integration, standardization, and enterprise-wide mission support for the AF are found here at SSG."[90]

AFITCC is responsible for the strategic planning for all AF commercial IT products and services used to support business operations. It is comprised of ten core members who report to the Commodity Strategy Official (CSO). In addition, there are 19 representatives from each of the MAJCOMs/Functionals. See Figure 3 for an illustration of the Council's organizational structure.

[90] "News Release United States Air Force," Release No. 03-05-21, Release date: May 21, 2003.

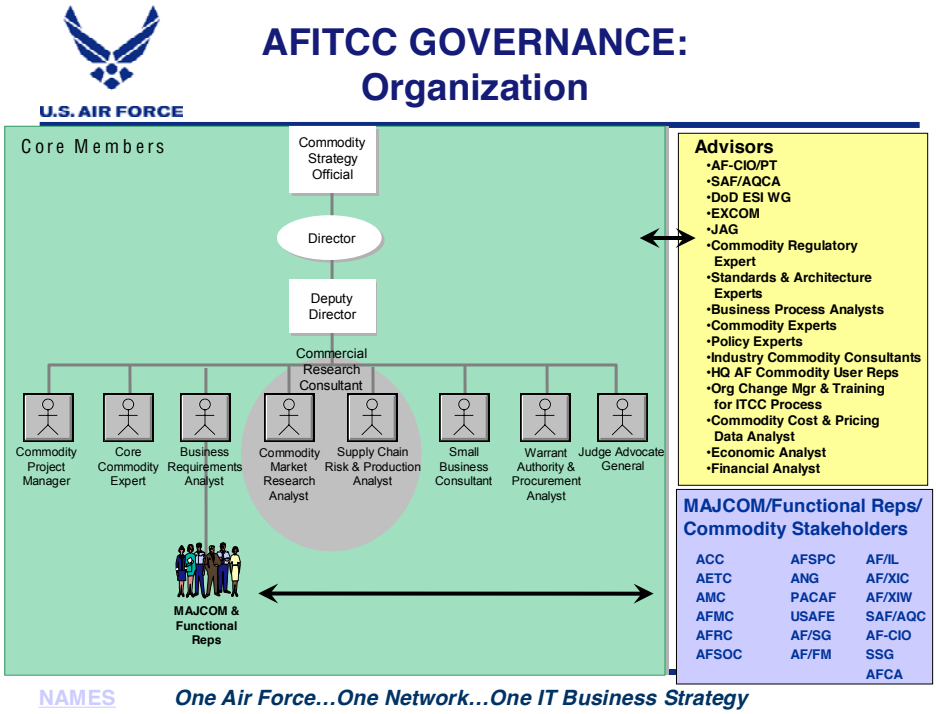

Figure 3. AFITCC Organizational Structure (From: Heitkamp)

Based on years of experience and lessons learned in acquiring IT products, SAF/AQC, AF CIO, and AFITCC developed an overarching strategy for the acquisition of commercial IT products and services, known as the Commodity Acquisition Management Plan (CAMP). The CAMP was divided into two parts. The first part consisted of AFITCC's background, governance, vision statement, guiding principles, and strategic objectives. See Figure 4 for a complete listing of AFITCC's vision, guiding principles, and strategic objectives.

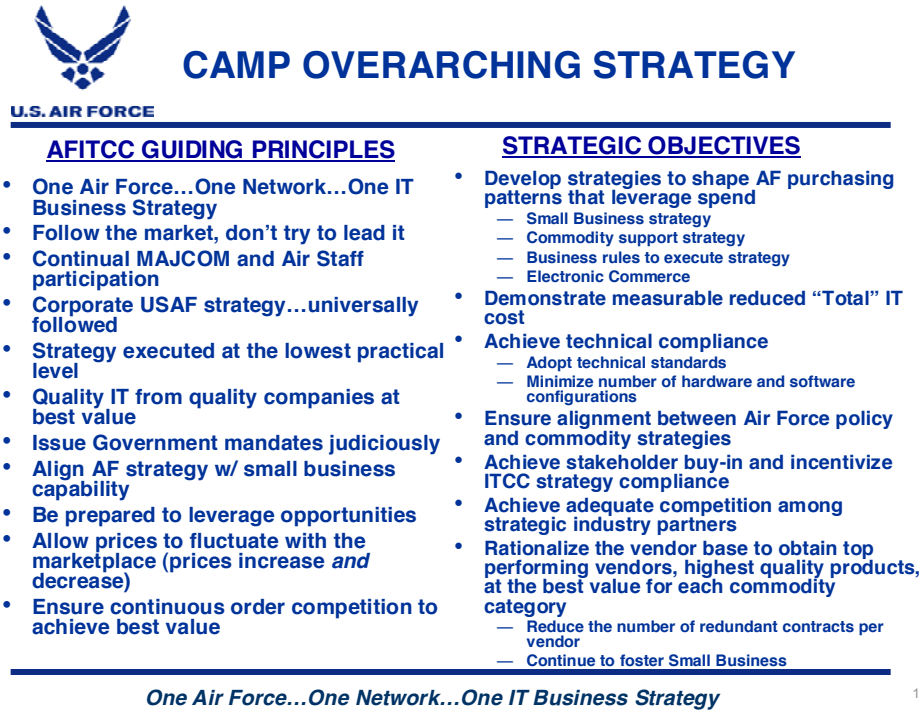

Figure 4. CAMP Overarching Strategy (After: Heitkamp)

Part two of the CAMP contained an annex for each specific commodity strategy, called a spiral. Examples of spirals included desktop/laptop computers, servers, Input/Output (I/O) peripherals, digital printing and imaging (DPI), and mobile telecommunications. Each spiral addressed all of the technical, business, management, and other considerations that controlled a specific acquisition. In developing and implementing each spiral, AFITCC utilized a methodical approach that included reviewing the current strategy, evaluating and assessing the current market, forecasting future demands, creating future strategy, approving the commodity strategy, establishing contractual instruments, rolling out the strategy, and monitoring and continuously improving the strategy. See Figure 5 for a depiction of the CAMP and its corresponding spirals.

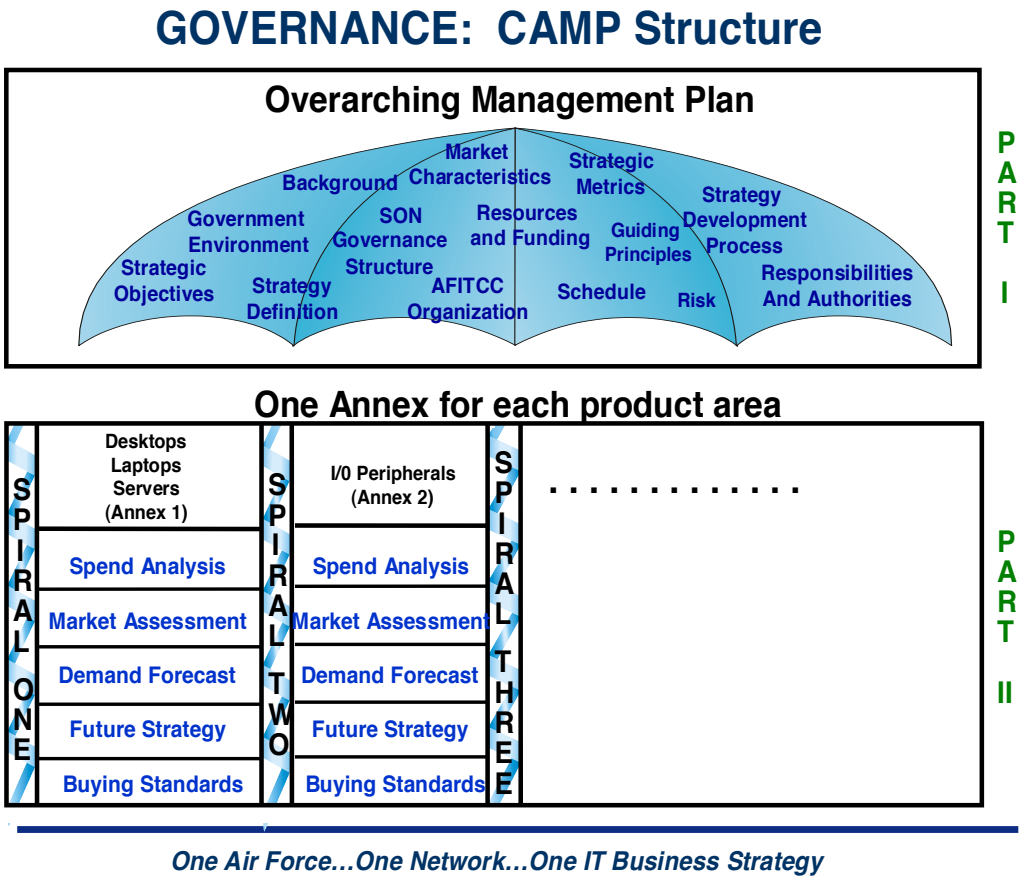

Figure 5. CAMP and its Corresponding Spirals (After: Heitkamp)

Although the terminology AFITCC used to describe its methodology for developing a commodity strategy differs from Laseter's "Balanced Sourcing" approach, the two models are actually very similar. Therefore, the sections hereafter will continue to address Laseter's seven steps, which were used to develop the topics and questions for the group and individual interviews as well as the review of AFITCC-provided documentation.

C. RESULTS OF THE VISIT

The first three elements of Laseter's "Balanced Sourcing" approach document facts and provide a basis for decision making. They include documentation of the spend, an industry analysis, and an explanation of cost and performance drivers. The second three steps represent the core of the commodity strategy. They are segmentation of supplier roles, business process priorities, and quantification of opportunity. The final

element, action plan for implementation, is a translation of the strategy into a set of tactical initiatives to capture the opportunity.[91] It also entails sustaining the commodity strategy.

1. Documentation of Spend

The first step in Laseter's "Balanced Sourcing" concept calls for a methodical approach to documenting and reporting an organization's spend. It entails analyzing spend along several dimensions, gathering complete and accurate data, and addressing the total ownership cost (TOC) of all goods and services currently purchased as well as those forecasted to be purchased in the future.[92] The result of the spend analysis is a comprehensive, documented appreciation of the organization's past and future purchases, segmented by users and suppliers.[93]

a. Spend Dimensions

An accurate spend analysis is essential to any commodity sourcing strategy.94 In collecting data concerning the purchase of desktop and laptop computers, AFITCC members, hereafter referred to as the commodity team, performed a spend analysis at the MAJCOM, base, supplier, and subcommodity levels. Specifically, the commodity team asked who is buying, what are they buying, when are they buying, where are they buying, why are they buying, and how are they buying IT products and services throughout the AF.

The commodity team analyzed which organizations were purchasing IT products and services in significant quantities. It first examined AF spend at the enterprise level, then investigated each of the MAJCOMs, followed by the wings, and, lastly, the squadrons.

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[91] Laseter, 70.

[92] Rendon, 10.

[93] Rendon, 11.

[94] Laseter, 71.

Next, the commodity team looked at what the AF was buying. It categorized purchases into subcommodities, such as desktops, laptops, printers, and cell phones. For example, from Fiscal Year 2000 (FY00) to FY03, the commodity team determined that desktop computers accounted for sixty percent of the AF's desktop, laptop, and server spend.[95] Additionally, the team discovered the AF predominantly purchased only three personal computer (PC) configurations.

To address when organizations were purchasing, the commodity team reviewed historical sales distributions. Consequently, the team identified three to four peak buying periods, the largest being at the end of the FY. For instance, contracting organizations typically receive funding in December, July, and September. Upon receipt, contracting officers tend to obligate the funds as soon as possible. Suppliers also recognized this trend and were inclined to increase their prices accordingly. The commodity team accounted for this phenomenon by developing the Quarterly Enterprise Buy (QEB) process. As a result, QEBs affected AF buying behaviors by forcing requiring agencies to plan and budget for IT requirements. The team also helped to prevent suppliers from charging premium prices during buying surges.[96]

Subsequently, the commodity team scrutinized where contracting organizations were obligating their funds. The commodity team not only investigated large businesses, but it also looked at what percentage of small businesses (SBs) provided the AF with IT products/services. In doing so, the team examined AF desktop and laptop sales by manufacturer. This revealed that three suppliers provided the AF with over eighty percent of its desktop and laptop computers.[97]

Next, the commodity team addressed why contracting offices bought specific IT products and/or services. In the process, the team discovered approximately

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[95] "CAMP Annex #1Briefing: Desktop/Laptop/Server Replacement Strategy," Slideshow: 14 October 2003.

[96] T. Gaylord, D. Priest, S. Woods, S. Smith, Interview by authors, tape recording, Air Force Information Technology Commodity Council, Gunter Annex, Maxwell AFB, Montgomery AL, 13 September 2005.

[97] "CAMP Annex #1Briefing."

forty percent of the AF's desktop and laptop computers were over four years of age. Therefore, the majority of the purchases appeared to focus on the replacement of aging technology.[98]

Finally, the commodity team researched how customers purchased and received IT products. Customers could employ various methods to obtain IT products and services to include submitting a request to the local contracting office, utilizing a General Service Administration (GSA) Federal Supply Schedule (FSS), using an AF-wide Blanket Purchase Agreement (BPA), or contacting another DoD/Federal agency.[99] Customers selected various methods based on convenience, time constraints, and relationship with local contracting office. Whichever the method selected, the customer chose the best brand, price, and service.

b. Information Gathering

Information gathering is a critical step in analyzing an organization's spend.[100] Due to inadequate inventory and contract reporting databases, the commodity team was unable to collect accurate and current data. Although the information was not perfect, the team was still able to identify trends, verify assumptions, and make informed decisions using the available information.

Two inventory databases supplied the majority of the information: Information Processing Management System (IPMS) and Information Technology Asset Management System (ITAMS). IPMS interfaced with AFWay, the AF's web-based system for purchasing Commercial-Off-The-Shelf (COTS) IT, to track IT assets from the time of purchase.[101] ITAMS collected order information and automatically fed it into

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[98] "CAMP Annex #1 Briefing."

[99] Ibid.

[100] Laseter, 71.

[101] D. Caterinicchia, "Air Force Launches IT Purchasing Site," 11 March 2002, <http://64.233.167.104/search?q=cache:Rmcrqrgzd_sJ:www.fcw.com/article88334+%22Information+Processing+Management+System%22+and+AFWAY&hl=en> (accessed 27 November 2005).

AFWay.102 Both systems provided the team with much-needed spend data. However, neither system included pricing information. Because it lacked detailed, accurate information, the contract reporting database, designed to document all purchases, was equally problematic. Manual input led to numerous errors; fields contained insufficient information; all purchases below $25,000 were omitted; and subcontracting information was not reported.[103]

AFWay was yet another means to collect spend data. It provided the commodity team with accurate, useful data; however, it was significantly underutilized by AF customers. Various reasons for not using the system included user-friendliness, obsolete information, and an onerous approval process.[104]

It is important to note that analyzing historic spend patterns is only a start and can sometimes be misleading. Examining future trends potentially provides more valuable information. Accordingly, the commodity team developed a demand forecast to acknowledge future capabilities, performance requirements, and inventory age. Most notably, the commodity team assumed AF requirements would continue to "mirror" the commercial marketplace for desktops and laptops computers (e.g., a shift from Cathode Ray Tubes to Flat Panel Displays). Additionally, the team expected an increased AF need for user mobility (e.g., an increased demand for integrated wireless capability). Finally, the team understood that replacement of an aging inventory was a major demand driver (e.g., almost forty percent of desktop and laptop computers were out of warranty).[105]

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[102] "An Overview of AFWay," <http://www.fcw.com/vendorsolutions/ossw/overview.asp> (accessed 27 November 2005).

[103] Gaylord et al.

[104] D. Priest, Interview by authors, tape recording, Air Force Information Technology Commodity Council. Gunter Annex, Maxwell AFB, Montgomery AL, 14 September 2005.

[105] "CAMP Annex #1Briefing."

c. Total Ownership Cost

The final component of conducting a comprehensive spend analysis addresses the TOC of the commodity and/or subcommodities. Proper spend documentation should address total cost, not just unit price.

Since the commodity team lacked the tools, data, and expertise to thoroughly address TOC, it hired commercial consultants to assist in developing a total acquisition cost model for the first IT spiral. The models were based on the aforementioned assumption that AF requirements would continue to "mirror" private industry needs for desktop and laptop computers. In doing so, the commodity team found the purchase of hardware represented only eleven percent of the total IT spend. Other significant costs included indirect costs, personnel costs for operations, and software. As a result, the commodity team recognized it could impact much more than purchase price.[106]

Additionally, the concept of standardization, or procuring "mainstream" configurations, presented an opportunity to decrease TOC for both the AF and its suppliers. Benefits of a single, standard configuration included economies of scale as well as many other reduced life cycle costs, such as installation, maintenance, repair, and disposal.

2. Industry Analysis

The second step of Laseter's "Balanced Sourcing" approach entails conducting an industry analysis. An effective industry analysis explores a variety of questions and issues, including but not limited to market characteristics and technological trends. Every industry is different and only the most relevant issues should be documented.

a. IT Market Characteristics

The commodity team relied heavily upon commercial consultants to aid in its market assessment. Based on its analysis, the team identified several attributes that significantly impacted the IT industry. First and foremost, the IT market was

[106] "CAMP Annex #1 Briefing."

characterized by rapidly changing technology. In fact, according to Moore's Law, computer processing power doubles every 18 months.[107] Software systems also improve on an accelerated curve. Second, four manufacturers, Dell, Hewlett Packard, Gateway, and IBM, dominated the PC market. MPC Computers (formerly Micron Computers), a fifth manufacturer, did not share a large portion of the PC market, but it did tailor to Government needs. A third characteristic was manufacturers utilized various sales models. Dell, Gateway, and MPC sold directly to the Government. IBM sold exclusively through resellers, and HP utilized both direct and reseller methods. Fourth, between the years 2000 and 2002, the Government made up nearly ten percent of the U.S. market share for PC's. More specifically, the AF encompassed approximately 0.50 percent of the share. Finally, due to large requirements and global AF needs, SBs experienced difficulty competing with large businesses in the IT industry for Government requirements.[108]

b. Technology Trends

In addition to identifying market characteristics, the commodity team worked with commercial consultants to perform a trend analysis. In the process, the team recognized a trend in future PC platforms. Future PCs will likely differ dramatically from current product offerings. However, the core of the platform will remain the same. Major overhauls will include integrated wireless, faster networks and processors, and more memory. New emphasis will be placed on higher-value platform initiatives, such as security and better systems management. Customers will continue to use the PC for e-mail, browsing, and document creation, but they will also use it in expanded ways, such as advanced peer-to-peer computing, multimedia-based collaborative communication, and digital hub for other peripheral user devices.[109]

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[107] B. Stime, "Computer Life Cycles; Holding Up Moore's Law," September 2005, <http://wcco.com/techresources/local_story_263171658.html> (accessed 18 November 2005).

[108] "CAMP Annex #1 Briefing."

[109] Ibid.

The commodity team also noted a new trend focusing on environment-friendly material. Consequently, industry should watch for fewer types of materials, systems designed for ease of disassembly, and advanced software tools that assist with data and license recovery.[110] All of these factors can and will affect TOC.

Finally, the commodity team acknowledged a gradual shift from desktop to laptop computers was expected to accelerate in future years. This was true for both the AF and industry, and it coincided with an overall expected need for increased user mobility.[111]

3. Explanation of Cost and Performance Drivers

Modeling total cost and identifying cost and performance drivers are two of the most critical organizational capabilities in a commodity sourcing strategy. A complete understanding of cost provides the foundation for virtually everything in the purchasing process, from developing strategy to standardizing configurations to improving supplier operations to negotiating prices.[112]

a. Cost Drivers

The commodity team examined cost drivers via multiple lenses. First, it considered purchase price alone. Direct labor and direct materials were determined to drive the purchase price of desktop and laptop computers. Specifically, the team noted computer manufacturers had employed vast sales forces to accommodate literally thousands of AF customers.[113]

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[110] "CAMP Annex #1 Briefing."

[111] Ibid.

[112] Laseter, 56.

[113] T. Gaylord, Interview with authors, tape recording, Air Force Information Technology Commodity Council, Gunter Annex, Maxwell AFB, Montgomery AL, 14 September 2005.

Next, the commodity team addressed TOC. In doing so, the team discovered it could affect much more than standard hardware purchase price. In particular, the team identified indirect costs and personnel costs for operations as areas of potential savings. See Figure 6 for an explanation of other cost drivers affecting AF IT TOC.

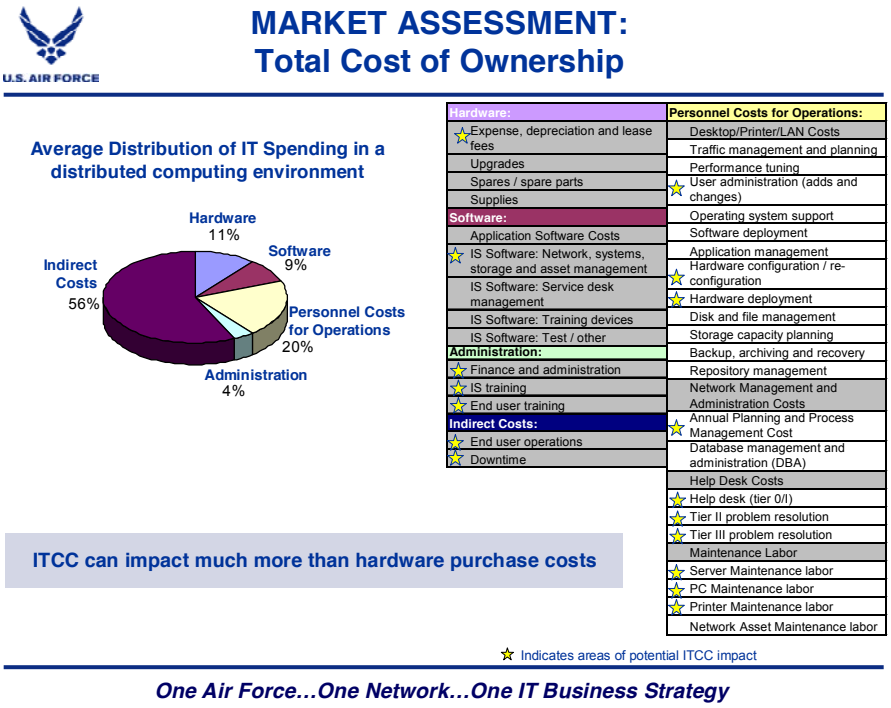

Figure 6. Cost Drivers Affecting TOC (From: Gartner Consulting)

b. Performance Metrics

The commodity team proposed eight AFITCC performance metrics in its desktop/laptop procurement strategy: (1) Number of IT product areas covered by an AFITCC strategy; (2) Percentage of standardized laptop and desktop computers purchased via AFWay; (3) Number of hardware and software configuration buying standards established by AFITCC; (4) Average price of standardized desktop and laptop configurations purchased from AF BPAs versus the commercially available price; (5) Average inventory age; (6) Reduced TOC for laptop and desktop computers; (7) MAJCOM satisfaction from both the AF CIO and Contracting (LGC) perspectives; and

(8) Total spend through AFWay. The total spend through AFWay was further divided into the percentage of spend by large and SBs, the number of orders by large and SBs, and the number and type of AFWay waivers.[114]

4. Segmentation of Supplier Roles

Segmentation of supplier roles is the first element of the actual commodity strategy. It focuses on segmenting purchases across a set of differentiated supplier roles (e.g., antagonistic, adversarial, cooperative, or collaborative). It also enables the organization to determine the type of suppliers needed and the roles the suppliers should play.[115] This may entail thinking in terms of subcommodities, customers, or phases in the product life-cycle.[116]

a. Segmenting Purchases

In order to achieve its vision of "One Air Force…One Network…One IT Business Strategy," the commodity team understood it must minimize the total number of hardware and software configurations. As a result, the team initially segmented purchases by hardware, IT services, software, and telecommunications. The purchases were then further segmented by commodity and, finally, by subcommodity. Each subcommodity required a separate sourcing strategy, or spiral. Figure 7 illustrates how the team eventually arrived at the subcommodity level.

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[114] "CAMP Annex #1Briefing."

[115] Laseter, 79.

[116] Rendon, 12.

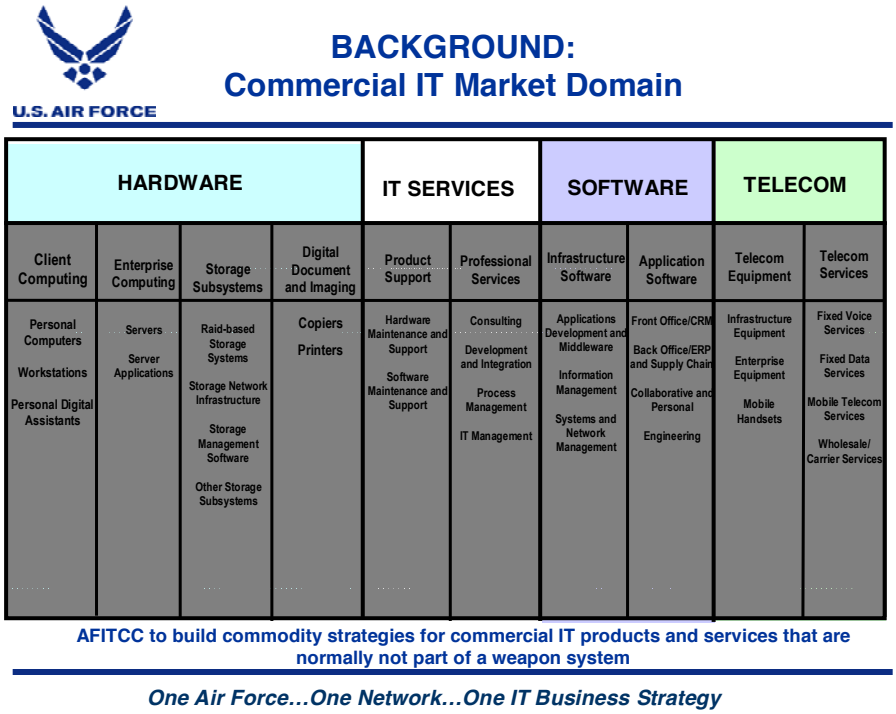

Figure 7. Commercial IT Market Domain (From: Heitkamp)

b. Supplier Types and Roles

After completing comprehensive industry and spend analyses and identifying critical cost and performance drivers, the commodity team pursued suppliers that would best meet its guiding principles and strategic objectives. Additionally, adequate capacity, ability to serve a global customer, and willingness to partner were key supplier considerations. Finally, SB participation posed a unique challenge to the team.

In accordance with its guiding principles, the commodity team needed to rationalize its supply base by obtaining top-performing suppliers who could provide the highest-quality products/services at the best value for each commodity category.[117] This meant drastically reducing both the number of current suppliers as well as the number of redundant contracts per supplier. It also meant attempting to eliminate the use of resellers. Finally, it meant continuing to foster a competitive environment.

[117] K. Heitkamp, "IT Commodity Acquisition Management Plan (CAMP)," Slideshow: 14 October 2003.

The AF is a very large consumer of IT products. In the past, the AF has purchased approximately 150,000 to 200,000 PCs per year.[118] Consequently, strategic suppliers must demonstrate adequate, available capacity to consistently meet AF requirements. The AF is also a global customer. Therefore, suppliers must support warfighters throughout the world. This not only includes providing hardware and software but also fulfilling warranties and service agreements.[119]

Because the IT marketplace is dominated by rapidly changing technology, the commodity team required strategic partners to be involved in all stages of the overarching and individual commodity strategies. This meant encouraging communication and information sharing with suppliers from requisition to disposition as well as rewarding desired supplier behaviors. It also meant finding suppliers that were focused on "making purchasing easy" while meeting or exceeding AF expectations, continually looking for ways to help the AF lower its costs, working toward continuous process improvement, and taking advantage of technology to maintain a competitive edge and add to their capabilities and responsiveness.[120]

Many SBs lack the capacity to satisfy AF-wide requirements and the capability to meet global AF needs. However, SB participation is still mandated by Federal Acquisition Regulation (FAR) Part 19, Small Business Programs. In fact, AF CIO and SAF/AQC would approve neither the commodity team's CAMP nor any of its corresponding spirals without a sufficient SB strategy.[121] In response, the team attempted to encourage SB participation by using SB resellers, encouraging large prime contractors to identify SB partners for specific products/services, recommending SAF/AQC issue guidance for considering SB in MAJCOM and base IT goals, and improving AFWay capabilities to support SB.[122]

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[118] Gaylord.

[119] Ibid.

[120] HQ Operations and Sustainment Systems Group, "Small Business Info," 25 February 2005, <https://www.gunter.af.mil/aq/aqt/afitcc/small_business_info.aspx> (accessed 20 November 2005).

[121] Gaylord et al.

[122] "CAMP Annex #1Briefing."

5. Business Process Priorities

The focus of business process priorities is to use the spend, industry, cost driver, and supplier role analyses to realign business processes to reflect the desired degree of integration with selected suppliers.[123] This requires transforming from a traditional purchasing function to a forward-leaning strategic sourcing agency. It also emphasizes supplier teaming and the use of current technologies.

a. Traditional Purchasing

Prior to the implementation of AFITCC, the AF did not possess a single strategy for the purchase of IT products and services. Instead, each MAJCOM, base, wing, and squadron developed and executed its own IT strategy. Some organizations attempted to leverage spend at the MAJCOM or local level, but very few, if any, were successful.[124]

AF customers could either submit IT requirements to their local contracting offices or purchase the requirement via the open market, a MAJCOM-unique BPA, a GSA FSS, an AF-wide BPA, or another DoD/Federal agency. Please see Figure 8 for a comprehensive list of past purchasing processes, payment methods, and execution tools.

[123] Rendon, 12.

[124] Ibid.

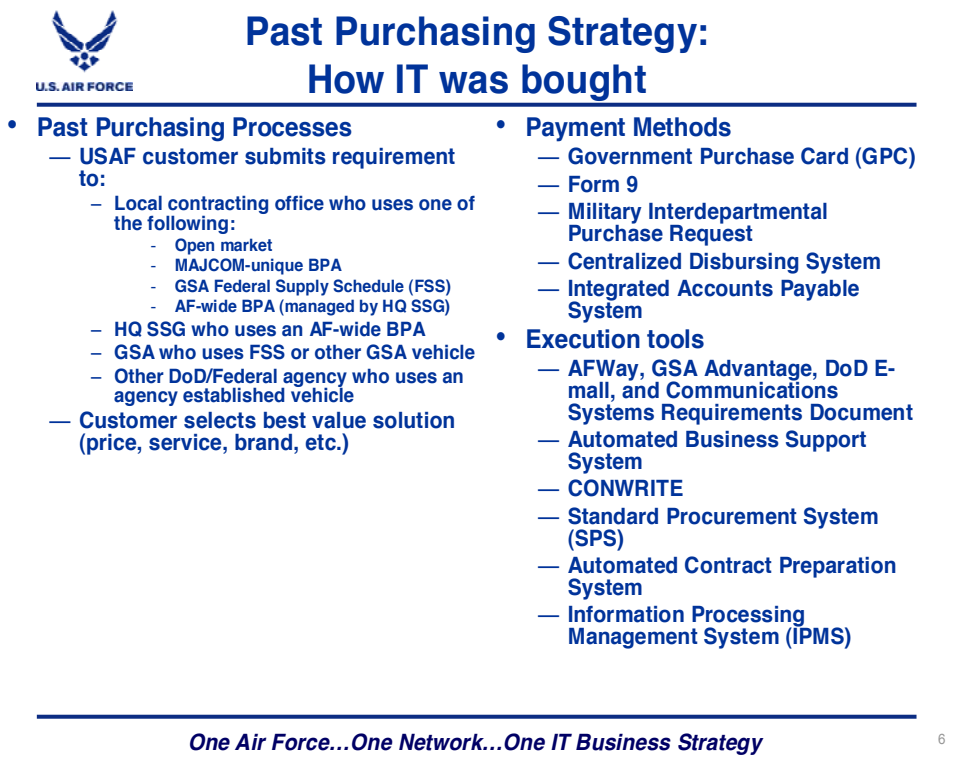

Figure 8. Past Purchasing Strategy (After: "CAMP Annex #1 Briefing)

As a result of the haphazard purchasing process, the AF became a "cash cow" for its IT suppliers and failed to identify a standard configuration for hardware or software. The AF also fell prey to the emergence of three or four peak buying periods, encouraged limited programming of funds, relied on "fallout" funding for the purchase of IT products/services, and neglected TOC.[125]

b. Strategic Sourcing

Besides performing a thorough spend analysis, conducting a comprehensive industry analysis, and identifying cost and performance drivers, the commodity team also internalized many critical strategic sourcing tenets. First, the team moved from a tactical perspective to a strategic focus. It formulated a centralized purchasing strategy that could be executed by decentralized contracting offices. This enabled the AF to act as a single customer as well as leverage its overall spend. Second,

[125] "CAMP Annex #1Briefing."

the team moved from a stovepiped mentality to an integrated approach. While generating both the overarching strategy and its corresponding spirals, AFITCC leadership solicited inputs from an integrated product team (IPT) consisting of a program manager, a contracting officer, a financial manager, a legal advisor, a commodity expert, an SB analyst, suppliers, and MAJCOM/Functional representatives. Leadership also encouraged early involvement from each of the aforementioned functional experts. Third, the commodity team moved from fixating on purchase price to evaluating TOC. The team emphasized standardization and electronic commerce. It also developed a life-cycle support strategy that addressed areas to continually monitor. This included assets, licensing, and technology refreshing as well as software maintenance, installation and disposition services, repair, maintenance, spare parts, and training.[126] Finally, the commodity team moved from treating suppliers as adversaries to treating them as partners. In doing so, the team fostered a win-win environment amongst its strategic partners.

c. Supplier Teaming & Integration

Specific areas for supplier integration included marketing the AF strategy execution (i.e., "mainstream" configurations, QEBs, use of AFWay, etc.), identifying critical cost and performance drivers, helping with asset management, participating in commodity team decisions on buying standards, and increasing visibility into technology evolution.[127] Additionally, because the IT marketplace is dominated by rapidly changing technology, the commodity team required supplier involvement at all stages of the overarching and individual commodity strategies. This meant encouraging communication and information sharing with suppliers from requisition to disposition. Ample communication enabled the suppliers and commodity team members to predict subsequent technology shifts, replace obsolete systems, decrease TOC for both parties,

[126] Heitkamp, K. "IT Commodity Acquisition Management Plan (CAMP)."

[127] "CAMP Annex #1Briefing"

establish replenishment cycle times, and promote technology refresh plans with common timelines to further exploit AF-wide buys.[128]

d. Current Technologies

The enabling technologies available to the commodity team during its first spiral were archaic at best. The team did not possess adequate tools to conduct a precise spend analysis. Quite often, members were forced to rely upon incomplete and inaccurate information provided by the various inventory and contracting databases. Additionally, the team was forced to manually consolidate requirements from the various MAJCOMs. As a result, team members had to sort through hundreds of spreadsheets before being able to build a solicitation. Finally, the commodity team lacked effective collaboration tools. Its members were spread throughout the globe, and they had to depend on e-mail and/or phone calls to communicate.[129]

6. Quantification of Opportunity

Quantification of opportunity provides the proof of a well-done strategy.[130] Quantification of opportunity not only involves defining critical success factors but also measuring them. Cost savings are commonly addressed because of their immediate impact on the organization and their simplicity to measure. However, many other factors contribute to an organization's success. These factors must also be quantified in order to set and achieve organizational goals.

a. Cost Savings

In terms of cost savings, the commodity team's results have been phenomenal. Since its inception, AFITCC has saved over $34 million in the purchase of desktop and laptop computers alone.[131] For example, during the FY03 end-of-year (EOY) purchase for laptop and desktop computers, the team obtained a $500K "vendor refund" for Air Force Reserve Command. It also acquired 3,076 unfunded requirements

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[128] "CAMP Annex #1 Briefing."

[129] Priest.

[130] Laseter, 84.

[131] Heitkamp.

for the replacement of obsolete desktop/laptop computers for Air Force Materiel Command (AFMC). Furthermore, it beat the estimated $850 price and obtained a higher technology level for Air University. Finally, by combining Air Combat Command, United States Air Forces in Europe, and Air Education and Training Command requirements, the team increased its buying power by more than twenty percent.[132]

b. Success Factors Other than Cost

Besides costs, the commodity team also defined success using several other key factors. These include increased standardization, decreased TOC, enhanced security, improved buying behaviors, and increased customer satisfaction.

The commodity team increased standardization by introducing and establishing "mainstream" hardware and software configurations. By doing so, the team was able to procure desktop and laptop computers with predictable, stable three to four-year service lives.[133] This provided warfighters with a consistent set of tools and improved the AF's use of human capital resources by allowing individuals to focus on their primary mission. Additionally, the team recognized fewer hardware and software configurations are much easier and cheaper to manage and maintain from requisition to disposition. Furthermore, standardized hardware and software configurations improved security by decreasing the time required to deploy new applications and security patches. Finally, standardization reduced complexity, training requirements, and help-desk workload. Ultimately, all of the above factors led to decreased TOC.[134]

Changing buying behaviors signified moving away from EOY funding, encouraging organizations to plan ahead for technology refreshers, and purchasing IT products/services via the appropriate means (i.e., AFITCC). In order to do so, the commodity team implemented QEBs, which forced organizations to rely less upon "fallout" money and more on planning for technology refreshers.[135] By demonstrating

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[132] "CAMP Annex #1Briefing."

[133] Ibid.

[134] Gaylord et al.

[135] Gaylord et al.

significant cost savings in its very first buy for AFMC, word spread, and the use of AFITCC increased. Today, organizations must obtain a waiver from their respective MAJCOM/Functional Chief Information Officer (CIO) in order to purchase laptop and desktop computers elsewhere.[136]

Standardization typically decreases TOC.[137] However, it also affects individual customer satisfaction. Because the commodity team only offered three standard configurations for laptop and desktop computers, it could not appease each and every individual customer. Therefore, the team's customer satisfaction objective was to meet eighty percent of its customers' requirements, while providing alternate avenues for those remaining customers needing additional capability. Regardless of the above, the team has yet to receive any substantial complaints. The far majority of the customers have been very pleased with the capabilities they have received for the prices they have paid.[138]

c. Quantification of Factors Other Than Cost

Although the commodity team recommended eight performance measures in its desktop and laptop strategy, it lacked the human and organizational capital resources to reliably quantify the percentage of standardized laptop and desktop computers purchased via AFWay, reduced TOC for laptop and desktop computers, and average inventory age. Additionally, the team has been unable to precisely track enhanced security.

7. Action Plan for Implementation

The action plan is the translation of the strategy into a set of tactical initiatives for successful implementation. To accomplish this task, the organization must align its organizational design factors, communication plan, and culture with the commodity council concept.

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136 "Information Technology Commodity Council (ITCC) Policy Memorandum."

137 Gaylord et al.

138 Heitkamp.

a. Design Factors

Organizational design factors describe how work is accomplished. They involve people, the tasks they do, the organization's structure, the flow of work, and organizational subsystems.[139] The commodity team was originally comprised of ten core members and 19 MAJCOM/Functional representatives, all of whom reported to the CSO. Team members were experts in both IT as well as their various functional areas. The core members were permanently assigned to the commodity team, whereas the MAJCOM/Functional representatives were assigned to the team as an additional duty. Commodity team members were responsible for the strategic planning for all AF commercial IT products and services.[140] Additionally, the first commodity strategy the team developed was the desktop/laptop replacement spiral. AFITCC's organizational structure was illustrated in Figure 3. The figure depicted a team-based structure with a flat hierarchy and relatively little formalization. It consisted of a self-directed work team responsible for various work processes (i.e., the development of individual spirals). The commodity team performed its work in sequence. The team first developed and approved the desktop/laptop spiral before the contracting organization was able to execute it. Organizational subsystems included but were not limited to financial management and human resource management. The commodity team received a portion of its funding via HQ SSG. The remainder of its funding was generated through a surcharge. The surcharge was used to recover the costs of implementing and operating AFITCC. Additionally, members were arbitrarily assigned from HQ SSG. Consequently, the commodity team had very little control over who it recruited and/or employed.

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[139] Roberts.

[140] "CAMP Annex #1Briefing."

b. Communication Plan

A comprehensive communication plan involves how an organization internally gathers, processes, distributes, and evaluates information. It also entails how the organization conveys its vision, mission, and strategic objectives to its external stakeholders.[141]

Due to the small size of the commodity core team, the primary means of coordinating internal work activities was through informal communication. This permitted considerable flexibility because team members transmitted a large volume of information through face-to-face communication.

Externally, the commodity team experienced several challenges communicating its vision, mission, and strategic objectives. For instance, because the commodity team failed to include the local contracting organization in its initial spiral development, the contracting office resisted implementation of the strategy. Additionally, the team did not possess a means to communicate its purpose to the AF as a whole. To address these communication concerns, the team contracted a commercial consultant to assist in developing a communication plan. The plan addressed the overarching strategic objectives as well as the specific desktop/laptop commodity strategy. It also identified key messages, target audiences, effective communication channels, and a time-phased plan of attack.[142] Ultimately, the commodity team relied on suppliers, MAJCOM/Functional representatives, the Air Force Information Technology Conference (AFITC), press coverage, and various site visits to disseminate its message.

c. Culture

Organizational culture is one of the main drivers of employee commitment and engagement. It describes how people in the organization treat one another and their stakeholders, and it emerges from top leadership direction and effective design factors. Of course, in any transformation initiative, resistance is inevitable.[143]

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[141] Roberts.

[142] Ibid.

[143] Roberts.

Since its inception in 2003, both AF CIO and SAF/AQC have provided tremendous support to the commodity team. For years, top leadership yearned to improve standardization and reduce TOC. However, they were unsure as to how to accomplish either. The successful development and implementation of a centralized purchasing strategy provided the prescription to what had ailed them for so long, and they supported it wholeheartedly. The consistent support from top leadership convinced many skeptical team members of the importance of their role in shaping future AF IT purchasing practices.

Throughout the transformation, the commodity team experienced a significant amount of resistance from many of the requiring organizations. For many years, these organizations had selected the best-value solution. Now, the commodity team was to select it for them. In order to sway their opinions, the team demonstrated immediate and significant cost savings. After achieving substantial cost savings, the team emphasized other benefits including decreased TOC and enhanced security. The commodity team also experienced resistance from the local contracting office that was to execute the strategy. The local contracting organization had not been included in the initial spiral development, and this led to miscommunication and poorly defined roles. Additionally, the local contracting office perceived the laptop/desktop spiral as a means to undermine its authority. In an attempt to remedy the situation, the commodity team drafted a Memorandum of Agreement to officially designate roles and responsibilities. However, the contracting organization refused to sign the document.

d. Implementation

It is critical to note that the development of any strategy is only half the battle. The other half is implementing the strategy, changing buying behaviors, and sustaining the effort. Throughout the process, commodity team members understood the data they had collected was not perfect. However, they knew they possessed enough information to act on it. Due to HQ SSG's expertise and the AF's large annual purchase volume, the commodity team reached a consensus with its stakeholders that the purchase of desktop and laptop computers provided an opportunity for immediate cost savings. In August 2003, when AFMC approached HQ SSG with a requirement for 12,500

computers but funding for only 10,000, the commodity team pounced at the opportunity. The team successfully fulfilled the requirement, and, as a result, AFITCC was born.

On 19 July 2004, SAF/AQC and AF CIO mandated that planned purchases for desktop/laptop computers be made through AFWay either from SBs or through the AFITCC-developed QEB process.[144] The QEB process consisted of three phases: (1) Register order in AFWay shopping cart; (2) Research, comparison, decision; and (3) Execute bulk order. At the beginning of the quarter and then monthly, suppliers updated their prices for "mainstream" configurations and optional features on AFWay. This included tiered prices at the 1, 500, 1,000, 5,000, 10,000, and 15,000 unit levels. The tiered pricing could be used at anytime to execute unplanned/urgent orders, but it was primarily used by requiring commands to plan for QEBs. Personnel then placed orders in AFWay in accordance with approved MAJCOM guidance. Next, the AF requested a quote from all suppliers based on known quantities and configurations. This "spot price" quote was expected to be the lowest price from each vendor. Finally, at the end of quarter the supplier(s) was selected.[145] See Figure 9 for an illustration of the aforementioned process.

144 "Information Technology Commodity Council (ITCC) Policy Memorandum 04-01, Mandatory Desktop and Laptop Strategy," AF CIO Policy Letter, 13 July 2004, <https://www.safaq.hq.af.mil/contracting/affairs/5339/mandatory/itcc-policy-memo-19jul04.pdf> (accessed 17 October 2005).

145 "CAMP Annex #1Briefing."

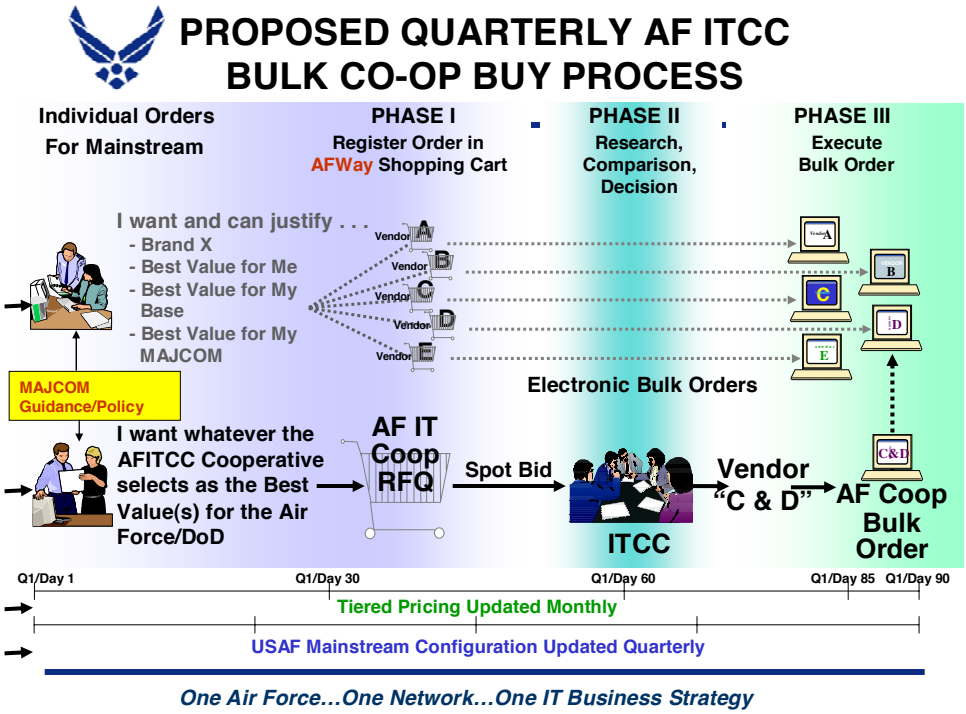

Figure 9. CO-OP Buy Process (From: "CAMP Annex #1 Briefing)

8. Sustainment

Sustainment serves as the final step of the transformation process. It is one that does not get nearly enough attention. It is imperative an organization continuously monitors and adjusts strategies in response to any problem that may arise.[146] This requires continuous effort to decrease costs as well as procedures and processes for maintaining success.

a. Driving Down Costs

As mentioned previously, the commodity team has already captured over $34 million in savings in the purchase price of desktop and laptop computers. In doing so, the team has discovered the purchase price of hardware represented only eleven percent of the total IT spend. Accordingly, the team has shifted its focus from decreasing purchase price to reducing common life cycle costs incurred by both the AF and the IT

[146] Beer, Eisenstat, & Spector, 10.

industry. As a result, the team has recognized it could work with its strategic partners to impact much more than purchase price.[147]

b. Maintaining Success

To ensure the efforts by the commodity team remained consistent with the AF's overall IT strategy, the team planned to review and update its overarching strategy and corresponding spirals with the CSO each year. The annual review would cover performance metrics, workload, and priorities. Adjustments to the overarching strategy and/or corresponding spirals would be made to reflect any changes generated during the review. Additionally, the CSO reserved the right to review any or all of these items as necessary, or when a specific commodity spiral was submitted for approval.[148]

The team also conducted an annual "AFITCC Roadmap Meeting" and invited suppliers, MAJCOM/Functional representatives, and top leadership to attend. The meeting provided a forum for all participants to assess where they have been, where they currently are, and where they are going. It also focused on updating buying standards, affecting AF buying behaviors, forecasting technology surges, and identifying future AF needs.[149]

D. CHAPTER SUMMARY

This chapter began with a background of AFITCC's origin. The purpose of the background was to provide the reader with a brief explanation of why HQ SSG was selected to implement AFITCC and who were the major stakeholders involved in the development and implementation process. The remainder of the chapter focused on the commodity team's development and implementation of a centralized purchasing strategy using Laseter's "Balanced Sourcing" approach as a construct to convey the strategy. The next chapter will discuss the strengths and weaknesses of AFITCC's methodology, provide recommendations for AFITCC as well as other aspiring commodity councils, identify limitations of this research, and suggest further areas of study.

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[147] Gaylord et al.

[148] Heitkamp, K. "IT Commodity Acquisition Management Plan (CAMP)."

[149] Gaylord et al.

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V. DISCUSSION

A. CHAPTER OVERVIEW

This chapter analyzes the results and findings presented in the previous chapter. A deeper analysis of Laseter's "Balanced Sourcing" approach led to the identification of the successes and challenges the commodity team encountered during the development and implementation of the commodity sourcing strategy. Based on the lessons learned, recommendations are provided to benefit future development, implementation, and sustainment of commodity councils throughout the AF and DoD. As a final note, limitations of the research are discussed and recommendations for future research are provided.

B. DISCUSSION OF RESULTS

1. Documentation of Spend

a. Successes

Based on the tools at its disposal, the commodity team almost immediately realized the information it gathered during the spend analysis was deficient in many areas. Regardless, the team understood the information it collected was still useful in documenting and reporting spend along several dimensions, including the MAJCOM, base, supplier, and subcommodity levels. Accordingly, the commodity team successfully addressed who, what, when, where, why, and how COTS IT products/services were purchased throughout the AF. As a result of the above, the team did not allow imperfect information to impede the development of its overarching and individual commodity strategies.

Additionally, industry experts proved to be indispensable to the commodity team. Industry experts helped to develop comprehensive TOC models, a fundamental requirement to properly documenting spend.[150] It is important to note the commodity team sought after commercial experts that were not only leading providers of

[150] Laseter, 73.

research and analysis within the IT industry but also very familiar with the unique requirements of the public sector. The commercial experts provided the team with objective, credible, defensible information that enabled the team to make smarter, faster decisions.

b. Challenges

The contract reporting database was especially problematic. The database was created to support a variety of compliance-oriented analyses (i.e., those purchases from small or disadvantaged businesses).[151] The database was not designed to support the detailed spend analyses required by commodity sourcing strategies. Additionally, the Individual Contracting Action Report (DD 350), specifically the Product Service Codes (PSCs), did not adequately describe the goods and services purchased by the AF; contracting professionals were not trained in assigning PSCs consistently; manual input led to numerous errors; all purchases below $25,000 were omitted; and subcontracting information was not reported.[152]

Although ITAMS, IPMS, the contract reporting database, and AFWay provide some visibility into and control over COTS IT purchases, they lack the ability to efficiently consolidate data and track spend. The systems are also not interoperable, which results in duplication of effort and wasted man-hours.

c. Recommendations

1. Obtain an Enterprise Spend Management (ESM) capability.

In order to prevent many of the problems encountered with the various databases discussed above, AFITCC should obtain an ESM capability. ESM is a new class of enterprise software and services that puts spend at the center of an organization's sourcing and procurement strategy. By allowing organizations to integrate their analysis, sourcing, contracting, procurement, and reconciliation processes into a single, cohesive system, ESM provides the enterprise-wide visibility and control organizations need to

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[151] L. Dixon et al., "An Assessment of Air Force data on Contract Expenditures," *Rand Project Air Force,* (Santa Monica, California: RAND Corporation, 2005).

[152] Gaylord et al.

efficiently manage and leverage their spend. This would thereby allow them to gain strategic advantages in spend management.[153]

It is important to differentiate among ESM capabilities, transactional management programs (i.e., SPS or CONWRITE), and electronic commerce (i.e., AFWay). While ESM capabilities are designed around subjects (i.e., orders filled per month and user demographics), transactional management systems and electronic commerce are designed around transactions (i.e., processing orders, tracking inventory flows, and transferring funds). The difference in design allows for a much more efficient and effective means to conduct complex spend analyses.[154]

AFITCC would immediately benefit from an ESM tool that provides rapid, easy access to the AF's spend data. This would enable the commodity team to gain more visibility into and control over the AF's spend by gathering accurate information, analyzing spend along several dimensions, investigating spend behaviors across the AF, and identifying new opportunities for savings.[155] Several companies offer commercially-available ESM solutions. However, predefined procedures mandated by such software will not likely match Government regulations and policies, thus forcing AFITCC to modify the system.[156] Regardless, ESM capabilities will remain a critical asset to future commodity councils.

2. Improve the contract reporting database so that it collects information the commodity team can easily access and use.

AFITCC would also profit from several improvements to the contract reporting database. A recent study by the RAND Project Air Force revealed, "services were undercounted in the DD 350 data, the single PSC data field was usually inadequate

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[153] Ariba Spend Management Solutions, *Frequently Asked Questions,* <http://www.ariba.com/solutions/spendmanagement_FAQ.cfm> (accessed 20 November 2005).

[154] A. Raedels et al., eds., *C.P.M. Study Guide,* 7ed., (Tempe, Arizona: Institute of Supply Management, 2001).

[155] Ketera, "On Demand Spend Management Solutions," (2005), <http://www.ketera.com> (accessed 20 November 2005).

[156] Laseter, 24.

to fully characterize the purchase, and the current list of PSC's did not capture several important categories of AF purchases."[157] The study recommended the following actions to improve the utility of the contract reporting database:

a. Explain to the contracting workforce DD 350 data is now being used to develop and implement new purchasing and supply management strategies, such as spend analysis and commodity sourcing strategies. The intent is to encourage contracting professionals to be more accurate in reporting purchases.

b. Work with other branches within DoD and other federal agencies to refine the list of PSCs to include codes that better describe AF activities.

c. Describe secondary activities in more detail.

d. Provide training in PSC coding to contracting officers, particularly those working with technically complex contracts or contracts that include many different types of activities.

In addition to the above, the following recommendations are provided to further improve the effectiveness of the contract reporting database:

e. Collect additional data for PSCs that do not accurately describe the product/service being purchased.

f. Change the DD 350 form to include subcontractor information and respective socioeconomic status.

g. Utilize existing contract writing systems to automate the entire DD 350 process.

2. Industry Analysis

a. Successes

Because the commodity team lacked both the experience and resources necessary to thoroughly evaluate the rapidly changing IT market, the team once again called upon leading providers of IT research and analysis to aid in the team's industry assessment. The industry experts provided years of corporate knowledge and relevant experience. They also helped the team recognize important market trends, prevent costly and avoidable errors, and make sound business decisions. Finally, the use of industry

[157] Dixon et al.

experts allowed the commodity team to make the most of its limited human capital resources by allowing team members to focus on other critical tasks.

Supplier involvement during the industry analysis step enabled the commodity team and its suppliers get their technology plans in sync. This curbed wasted effort and allowed the commodity team to leverage supplier innovation. The commodity team also worked with its suppliers to develop an industry map that depicted future IT trends and technologies. By understanding these trends and technologies, the commodity team could then consult its MAJCOM/Functional representatives to identify future capability and performance requirements as well as develop accurate demand forecasts.

b. Challenges

As the commodity team gained experience and knowledge, it recognized it did not require the same level of commercial expertise for each and every commodity strategy, or spiral. As a result, the team realized some of the assistance it procured, such as advisory licenses, standing consulting capability, and access to data and research services, was unnecessary and underutilized. The team also noted it could conduct some market research more efficiently and less costly in-house.

c. Recommendations

1. Continue to use industry experts in areas where deficient.

Commodity teams must realize help is available from recognized experts. Sources of assistance include but are not limited to commercial consultants, suppliers, professional organizations, institutions of higher learning, and other federal agencies.

Until the AF develops and trains its own market experts, the commodity team should continue using leading providers of IT research and analysis to conduct industry analyses. The private sector has years of corporate knowledge and relevant experience in concepts such as strategic sourcing, commodity councils, and change management. Using the help of industry experts, commodity teams are more likely to make sound business decisions, apply best commercial practices, and look for ways to continually improve the organization.

2. Develop industry maps of the supply chain.

If a commodity team does not have sufficient funds to hire commercial consultants, an industry map and Porter's "Five Forces of Competition" model are both excellent tools. Industry maps are diagrams of the supply industry that highlight the flow of product from key supply industries to major customer industries. At a minimum, industry maps should include local, national, and global suppliers. They also should illustrate the various roles companies may play. The maps provide the initial information necessary to examine the basic competitive dynamics in the industry using Porter's "Five Forces" model: (1) Customer power; (2) Supplier power; (3) Existing rivalry; (4) Barriers to entry; and (5) Threat of substitution.[158]

3. Keep current with industry best practices, continually update industry maps, and remain flexible.

Organizations, such as AFITCC, must continually review and update industry maps to keep current with new technologies and best practices within industry. They must also be able to adapt to sudden changes in the supply market. If organizations do not rely on industry experts, then they must develop the resources and capabilities to conduct comprehensive analyses internally.

3. Cost Drivers

a. Successes

Using the help of suppliers as well as industry experts, the commodity team developed a very good understanding of cost drivers and TOC. This is due to the fact that models developed in cooperation with suppliers are the most effective.[159] Collaborative development leads to better cost models because it captures supplier insight. More importantly, jointly developed models have an increased likelihood of being adopted in mutual improvement efforts, which can lead to reduced life cycle costs.[160]

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[158] Porter.

[159] Laseter, 56.

[160] Laseter, 38.

Additionally, the commodity team examined cost drivers via multiple lenses. First, it considered purchase price alone. Then, it considered TOC. Finally, it attempted to identify common cost drivers to both AF and its suppliers. By accomplishing all of the above, the team found it could work with its suppliers to affect much more than standard hardware purchase price. Specifically, the team discovered the purchase of hardware represented only eleven percent of the total IT spend.[161]

b. Challenges

Although the commodity team was able to develop cost models based on the assumption that AF requirements would continue to "mirror" private industry needs for desktop and laptop computers, the team still has no means to measure reduced TOC. This is primarily due to a lack of comprehensive, accurate spend data. Once again, an ESM system would help the commodity team manage and leverage spend from requisition to disposition, while providing systematic measurement, tracking, and reporting of best practices.[162]

A good plan will fail without investing the time to get the facts. The commodity team learned very quickly it could not neglect a single step in the commodity strategy development and implementation process. This often meant revisiting steps over and over to ensure the team had collected the necessary information. The team also learned performing the initial steps of a commodity strategy do not always follow a sequential pattern.

c. Recommendations

1. Continue to develop a TOC-modeling capability.

Many organizations, including AFITCC, have yet to develop a TOC-modeling capability to their desired level.[163] The following five key principles apply to developing precise, dynamic cost models for purchased goods and services: (1) Capture cost drivers, not just cost elements; (2) Build commodity-specific models to highlight the

[161] "CAMP Annex #1Briefing."

[162] Ariba Spend Management Solutions.

[163] Laseter, 56.

key drivers; (3) Consider the impact of TOC; (4) Start simple and add complexity only as needed; and (5) Triangulate around data to improve accuracy and confidence.[164]

Capturing cost drivers, such as wage rates or the number of sales personnel, produces a model that answers the question "What if?" in lieu of "What is?" Because the same cost driver affects different cost elements in different ways, capturing cost drivers also examines tradeoffs. Accordingly, models that consider cost drivers provide far more insight for decision making.[165]

Inherent disparities in products will cause various cost drivers to emerge among commodities. Therefore, models must be commodity-specific.[166]

The importance of modeling TOC is common among all commodities. Few, if any, decisions are based merely on a product's purchase price. In addition to price, cost models should include factors, such as installation, warranty, maintenance, repair, and disposition.[167]

Many efforts fail because overly complex cost models lack sound information. Thus, early efforts should focus on simple models that include only the most significant cost elements and drivers.[168]

Finally, the use of multiple sources of information to triangulate around data improves accuracy. Information provided by suppliers, site visits, commercial experts, and literature all aid in triangulation.[169]

2. Use a top-down methodology to model an organization's outside purchases.

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[164] Laseter, 39.

[165] Ibid, 40.

[166] Ibid, 40.

[167] Ibid, 40.

[168] Ibid, 40.

[169] Ibid, 40.

Using the five key principles for cost modeling described above, a top-down methodology provides a systematic approach to modeling an organization's outside purchases. The five-step process includes: (1) Baseline and segment spend; (2) Quantify important elements of cost of ownership; (3) Use cost drivers to build a TOC model at the commodity level; (4) Develop a supplier-level TOC model based on key drivers; and (5) Build cost tables at the item level.[170] It is important to note the commodity team considered steps one through three while developing its cost model. However, the team required additional resources and experience to complete the final two steps of the process.

During step one, a baseline is developed and spend is segmented. Additionally, purchased items and services are combined into logical groupings, or commodity families.[171] The commodity team initially segmented purchases by commodity families (e.g., hardware, IT services, software, and telecommunications). The purchases were then further segmented by individual commodities (e.g., client computing and enterprise computing). Finally, the commodity team arrived at the subcommodity level (e.g., desktop and laptop computers). See Figure 7 for an illustration of how the team eventually arrived at the subcommodity level.

Step two involves the development of a commodity-wide TOC model; this often highlights some cost elements that were not initially obvious.[172] The commodity team divided AF IT spend into the following major categories: indirect costs, hardware, software, personnel costs for operations, and administration. In doing so, it identified indirect costs and personnel costs for operations as substantial cost elements. See Figure 6 for the average distribution of AF IT spending in a distributed computing environment.

An effective model captures cost drivers, not just cost elements. Thus, commodity-wide cost drivers are identified in step three.[173] The commodity team

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[170] Laseter, 44-50.

[171] Ibid, 44.

[172] Ibid, 45.

[173] Ibid, 46.

isolated several cost drivers for desktop and laptop computers, including but not limited to downtime, hardware configuration, warranties, and the number of sales representatives employed by suppliers.[174]

The cost model resulting from step three is actually a compilation of cost drivers from various suppliers. Accurate TOC models reflect the fact that suppliers are not all the same. Accordingly, in step four, supplier-level TOC models must be built using a similar process as above. First, break the supplier's overall cost structure into key components, and then quantify the key drivers for each major component.[175] The research team found no evidence that proved the commodity team's TOC models have reached this level of complexity. However, research did show the commodity team is constantly exploring ways to capture this data and improve the AF's capability to measure TOC.[176]

Step five requires creating cost models at the item level, and it takes the process to even greater detail. Cost tables are created by calculating a variety of scenarios using the item TOC model and organizing the results into tabular form. Combining cost tables produces an overall TOC model at the part-number level.[177] Once again, the research team found no evidence that proved the commodity team's TOC models have reached this level of complexity.

3. Use cost-based targeting to gain a better understanding of cost drivers and TOC.

By either convincing or demanding suppliers open their financial books, the commodity team can use cost-based targeting to gain a greater understanding of supplier cost drivers and stimulate improvement in supplier operations. Understanding

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[174] Gaylord et al.

[175] Laseter, 48-49.

[176] Heitkamp, K. "IT Commodity Acquisition Management Plan (CAMP)."

[177] Laseter, 50-56.

cost drivers and doing comparative benchmarks can result in improvements, such as reducing quality costs, improving equipment up-time, and lowering staffing levels.[178]

4. Continue to partner with private industry to identify cost drivers and develop TOC models.

The most effective cost models are developed in conjunction with supplier participation. Therefore, in the true sprit of a cooperative or collaborative relationship, the commodity team should continue to partner with its suppliers to identify cost drivers and develop TOC models. This includes building supplier-level TOC models as well as creating cost tables at the item level.

4. Segmentation of Supplier Roles

a. Successes

By using the help of recognized experts to conduct spend, industry, and cost driver analyses, the commodity team gathered a tremendous amount of information that provided a basis for decision making. As a result, the team became intimately familiar with the supplies and services it was purchasing and was able to effectively segment spend by subcommodity. The team first developed a desktop/laptop spiral in October 2003. Since then, the team has pursued server, I/O peripherals, DPI, and mobile telecommunication spirals.

The commodity team thoroughly assessed supplier competence using four broad criteria: capabilities, cost structure, risk factors, and relationship potential. Capabilities included technical and business expertise, processes, quality, customer service, savings, innovation, technology, and capacity.[179] Cost structures and drivers were important because they denoted whether supplier pricing was sustainable over the long term. Cost structures and drivers also indicated the feasibility for suppliers to continually reduce costs and, ultimately, prices. Risks were addressed in both the CAMP

[178] Heitkamp, K. "IT Commodity Acquisition Management Plan (CAMP)." 143.

[179] HQ Operations, "Small Business Info."

and the desktop/laptop spiral, and they were mitigated via site visits and financial analyses. Lastly, relationship potential was characterized by early supplier involvement, willingness to partner, and mutual goals.

b. Challenges

Initially, the team experienced a significant amount of resistance from suppliers. The AF had changed its buying behaviors, but its suppliers had not changed their selling behaviors. In fact, most suppliers were reluctant to do so because they were unsure if the commodity council concept would actually take flight. Consequently, through its use of bulk buying, the commodity team not only significantly reduced the purchase price of desktop and laptop computers, but it also left its suppliers with excess sales forces. The result was an adversely affected bottom line for suppliers and an inevitable reduction in knowledgeable sales representatives for the AF.[180]

Effective supplier management and development begins by determining the optimal number of suppliers an organization should maintain.[181] When considering the characteristics of a leverage strategy (i.e., combining volumes for lower costs, using longer-term agreements, and pursuing a win-win relationship), the trend has been for organizations to decrease their supply bases. This is because developing strategic partnerships requires significant investments of physical, human, and organization capital resources. Using the help of industry experts, the commodity team originally recommended three suppliers for the procurement of desktop and laptop computers. However, due to socioeconomic constraints as well as Competition in Contracting Act (CICA) requirements, the "optimal" number rose to seven, including four SBs.[182]

Overloading supplier capacity posed a significant risk to satisfying AF-wide requirements. SBs and/or suppliers that produced unique items, such as Common Access Card keyboards, often experienced difficulties meeting the large demand.[183]

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[180] Priest.

[181] Monczka, Trent, & Handfield, 277.

[182] Gaylord.

[183] Priest.

SB participation is a perpetual challenge for the commodity team. Although the team encouraged SB participation through the acquisition of other than "mainstream" configurations, the procurement of specific services (e.g., installation, maintenance, and disposition), and the use of SB resellers, it continues to search for means to increase SB participation and satisfy annual SB goals.

c. Recommendations

1. Request specific proposals from suppliers about how the organizations might collaborate.

When segmenting supplier roles, the commodity team must identify suppliers that are willing and able to partner in order to benefit from the value created by a collaborative relationship. Suppliers that are interested in long-term, collaborative relationships should also be willing to invest in developing and sustaining the relationships. Requesting specific proposals from suppliers about how the organizations might collaborate (e.g., decreased TOC, improved quality, and/or increased SB participation) provides an excellent opportunity to evaluate relationship potential.[184]

2. Strengthen compliance with SB subcontracting plans.

In order to further encourage SB participation, the commodity team could mitigate the effects of commodity strategies by strengthening compliance with subcontracting plans.[185] Federal contractors that receive contracts of $500,000 for products or services are required to prepare plans for subcontracting with SBs.[186] Compliance with these subcontracting plans and agency oversight of contractor compliance with the plans has been inconsistent.[187] To encourage greater SB participation as subcontractors in commodity strategies, the commodity team could

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[184] Laseter, 100.

[185] Office of Federal Procurement Policy, "Contract Bundling: A Strategy for Increasing Federal Contracting Opportunities for Small Business," (October 2002), 9.

186 Federal Acquisition Regulation, "Subpart 19.7- The Small Business Subcontracting Program," <http://www.arnet.gov/far/current/html/Subpart%2019_7.html> (accessed 30 November 2005).

[187] General Accounting Office, "Small Business Subcontracting Report Validation Can Be Improved," GAO-02-166R, (Washington, D.C., December 13, 2001).

include a factor to evaluate past performance indicating the extent to which a supplier attained applicable goals for SB participation under contracts that required subcontracting plans.[188]

3. Enact policy so that the commodity team receives SB credit for SBs acting in a significant subcontracting role.

Since its inception, AFITCC has encouraged large suppliers to identify SB partners for specific products/services (i.e., installation, maintenance, and disposition). Providing these products/services jointly decreases life cycle costs and reduces contract administration. Conversely, AFITCC does not receive SB credit unless a contract award is made to a SB as the prime contractor. This results in a dilemma for the commodity team. In order to resolve the matter, policy should be enacted ensuring AFITCC receives SB credit for SBs acting in a significant subcontracting role. This would result in significant TOC savings to the AF.

5. Business Process Priorities

a. Successes

The commodity team has made tremendous strides in transforming from a traditional purchasing function to a forward-leaning strategic sourcing organization. The team has realigned its business processes to support a centralized purchasing strategy, adopt an IPT approach, and address TOC. The centralized purchasing strategy has enabled the AF to act as a single customer, implement bulk buys, and leverage its spend. The IPT approach has resulted in the use of MAJCOM/Functional representatives to communicate AFITCC's vision, influence buying behaviors, address customer concerns, identify user requirements, coordinate with local contracting and finance offices, and participate in commodity team decisions on buying standards. The commodity team has decreased TOC by promoting electronic commerce, eliminating redundant contracts, and emphasizing standardization.

[188] Office of Federal Procurement Policy.

One of the fundamental tenets of strategic sourcing is a customer and supplier working together to achieve savings opportunities will do better than each working alone.[189] The commodity team understands this principle and has moved from an antagonistic/adversarial relationship with its suppliers to a much more cooperative/collaborative one. See Figure 10 for additional information regarding supplier relationships. The commodity team and its suppliers have worked together to identify cost drivers, decrease TOC, predict technology shifts, establish replenishment cycle times, promote technology refresh plans with common timelines, and participate in buying standards decisions.[190]

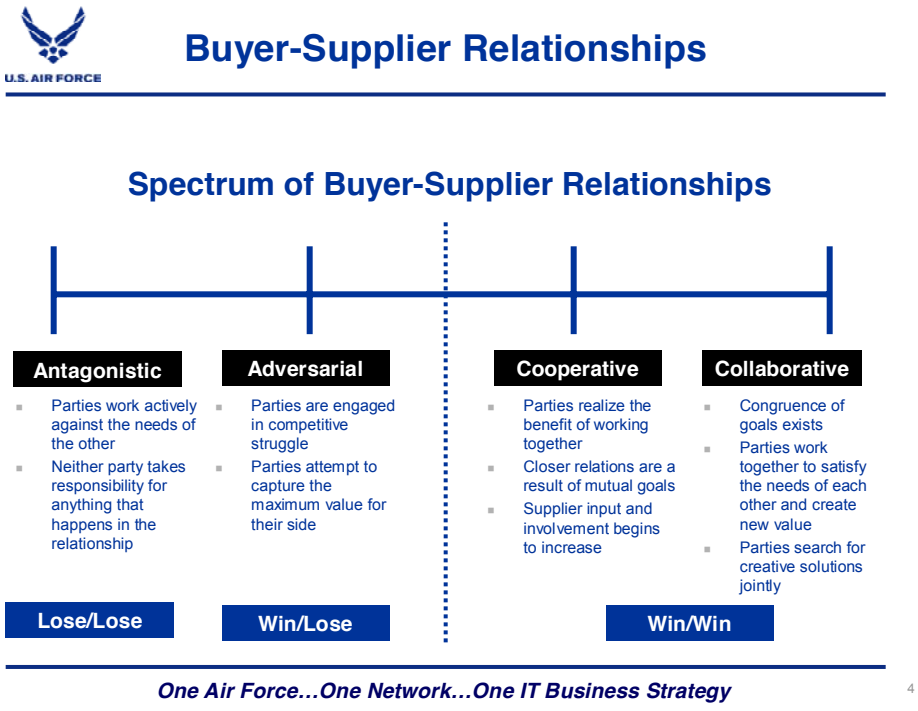

Figure 10. Buyer-Supplier Relationships (From: Hudgens, B. "Supply Chain Alliances and Partnerships." Slideshow: 11 April 2005.)

[189] Laseter, 89.

[190] CAMP Annex #1Briefing."

Although the commodity team lacked many tools supporting a commodity strategy process, AFWay has proven to be a tremendous asset. AFWay is the web-based AF system for procuring IT equipment. The system combines electronic business and electronic commerce practices to guide users through requirement approval, purchase, and asset tracking in one relatively simple process.[191] On 12 August 2003, AF CIO mandated all AF purchases of desktop and laptop computers be made through AFWay.[192] Since then, AFWay has not only reduced the number of mandatory actions but also minimized manpower requirements.[193] See Figure 11 for a comprehensive explanation of the services/products AFWay offers as well as the benefits it provides.

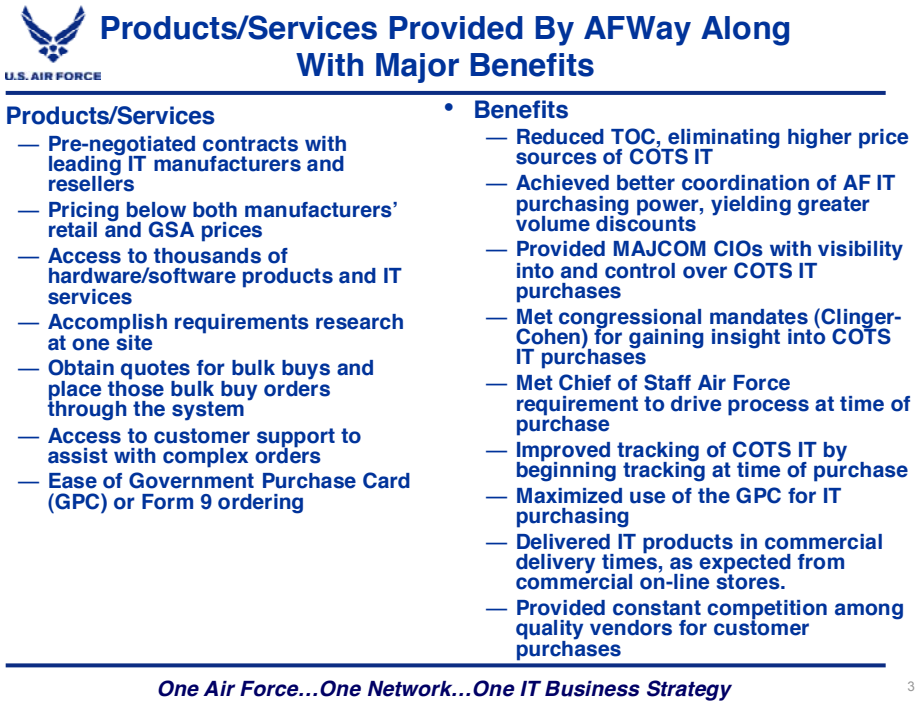

Figure 11. AFWAY Products/Services & Benefits (From: HQ Operations, "Buying Tools.")

[191] HQ Operations and Sustainment Systems Group, "Buying Tools," 25 February 2005, <https://www.gunter.af.mil/aq/aqt/afitcc/BuyingTools.aspx> (accessed 20 November 2005).

[192] Information Technology Commodity Council (ITCC) Policy Letter.

[193] HQ Operations, "Buying Tools."

b. Challenges

According to Laseter, "Effective supplier relationships are built on knowledge of the supplier's competency, goal congruence, and mutual dependence, and are sustained through extensive two-way communications about performance."[194] The commodity team thoroughly assessed supplier competency during the segmentation of supplier roles. However, the team has yet to achieve goal congruence and mutual dependence with its suppliers to the maximum extent practicable.

Mutual dependence occurs when all parties understand cooperation is necessary for everyone to prosper.[195] The implementation of AFITCC led to a mutual dependence between the commodity team and its suppliers because the suppliers' dependence on the AF increased as its opportunity for sales to the AF increased. Additionally, by rationalizing its supply base, the commodity team's reliance on its suppliers increased because it concentrated its purchasing volume with several select suppliers. It is important to note, however, that mutual dependence was not ideal due to socioeconomic constraints and CICA requirements. The commodity team certainly decreased its supply base, but it did not optimize it.

Mutual, aggressive goals compel all parties to realize maximum benefit from the relationship. To make goal congruence a reality, profit and risk must be addressed. When considering profit and/or cost savings, the first requirement is dividing the pie so that everyone gets enough to foster the mutual dependence described in the previous paragraph. The second requirement is making certain the pie does not shrink as it is being cut.[196] While the commodity team has achieved incredible cost savings, some of its suppliers have indicated they cannot afford one or more fiscal quarters without a large order. Additionally, AFITCC leadership has expressed concern regarding driving the purchase price of desktop and laptop computers too low.[197]

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[194] Laseter, 12.

[195] Ibid, 94.

[196] Ibid, 94.

[197] Heitkamp.

When considering risk, a collaborative relationship ensures the greater burden of the risk is placed on the organization that can best assume it.[198] Although the commodity team assumes various cost, performance, technical, and cultural risks in developing and implementing a commodity strategy, its suppliers must endure the uncertainty of continuous competition and an all-or-nothing order mentality. If the commodity team continues to demonstrate a lack of concern for supplier profitability, intense rivalry, damaged relationships, and monopolistic conditions can and may arise.

The IT tools available to the commodity team during its first spiral were inadequate to say the least. The team did not have an accurate, comprehensive means to collect, warehouse, and maintain purchasing data. It also lacked a spend analysis capability to translate the data into useful information. Finally, the team did not possess real-time and team collaboration tools to instantly connect its many members dispersed throughout the globe.

c. Recommendations

1. Integrate the supply web, leverage supplier innovation, and evolve a global supply base.

The key to a commodity sourcing strategy is not an array of purchasing skills, but a broader set of six organizational capabilities, as indicated in Figure 12. Research has demonstrated that some capabilities are universally applicable, while others only apply for specific organizations or industries. In fact, no single organization has completely developed all six capabilities. The first three capabilities represent the basis for defining and developing the supply base; as such, they apply to any organization. The other three capabilities emphasize various means to leverage the supply base for competitive advantage.[199]

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[198] Laseter, 96-97.

[199] Laseter, 6.

Figure 12. Organizational Capabilities (After: Laseter)

When feasible, the commodity team should attempt to integrate the supply web, leverage supplier innovation, and evolve a global supply base. Integrating the supply web includes employing just-in-time inventory management, outsourcing other than core competencies, using third-party logistics providers, and increasing the availability of information. In addition, leveraging supplier innovation involves sharing technology plans, defining supplier roles and boundaries, and utilizing price-based, cost-based, or value-based target costing. Finally, evolving a global supply base primarily entails pursuing suppliers outside the home market that offer superior technology or lower labor costs.[200]

2. Develop effective supplier relationships based on knowledge of a supplier's competency, goal congruence, and mutual dependence.

The commodity team must continually focus on building and sustaining supplier relationships. In doing so, the team cannot forget knowledge of a supplier's

[200] Laseter.

competency, goal congruence, and mutual dependence lay the foundation for successful supplier relationships. Additionally, extensive two-way communications regarding supplier and customer performance provide a means to sustain relationships.[201] Finally, the commodity team must understand that establishing improvement targets, structuring incentives, and investing in supplier development all play a role in striking the right balance between a purchaser and its supplier. A passive approach without aggressive targets leads to a stagnant supply base as well as to trust-based partnerships that do not deliver results. Targets that appear unreasonable or disregard supplier profitability can lead to adversarial or antagonistic relationships.[202]

3. Adopt five enabling technologies that support a commodity sourcing strategy.

Even more surprising than the commodity team's success within the confines of a bureaucracy is the fact that it did so without many of the enabling tools and technologies available to its counterparts in the private sector. Research advocates five types of IT applications to support commodity sourcing strategies: (1) Transactional management systems; (2) Electronic commerce; (3) Purchasing information management; (4) Decision support tools; and (5) Real-time and team collaboration tools.[203] It is important to note predefined procedures mandated by such IT applications will not likely match Government regulations and policies, thus forcing commodity teams to modify the systems.[204]

Transactional management systems streamline transactions via integrated software solutions and uniform policies and procedures. Examples of such systems include SPS, ACPS, or CONWRITE. Electronic commerce streamlines transactional management across the AF to issue orders, track inventory flows, and transfer funds. AFWay is an example of electronic commerce. Purchasing information management

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[201] Laseter, 12.

[202] Ibid, 10.

[203] Ibid, 23.

[204] Ibid, 24.

involves warehousing of purchasing data in addition to the procedures for collecting and maintaining the data. Decision support tools translate data into useful information and, in the hands of a knowledgeable professional, convert information into knowledge.[205] ESM capabilities combine purchasing information management and decision support tools into a single application. Accordingly, ESM provides both the ability to collect, store, and access data as well as convert it into useful information. Lastly, real-time and team collaboration tools enable wide-spread teams to collaborate with colleagues, customers, business partners, and suppliers. Presence awareness may be used to see who is on-line and available to converse from desktop or wireless devices. Instant messaging may be used to converse in real-time. Web conferences may be used to share a document, application, or entire desktop, or to conduct a whiteboarding session. Finally, team spaces may be used to centralize and share information on any project or ad hoc initiative.[206] Several private firms offer real-time and team collaboration tools.

6. Quantification of Opportunity

a. Successes

The commodity team has been able to track cost savings because of well-defined measurements. In doing so, the team has saved the AF over $34 million in the purchase of desktop and laptop computers alone.[207]

b. Challenges

The commodity team proposed eight AFITCC performance metrics in its desktop/laptop procurement strategy: (1) Number of IT product areas covered by an AFITCC strategy; (2) Percentage of standardized laptop and desktop computers purchased via AFWay; (3) Number of hardware and software configuration buying standards established by AFITCC; (4) Average price of standardized desktop and laptop configurations purchased from AF BPAs versus the commercially available price; (5) Average inventory age; (6) Reduced TOC for laptop and desktop computers; (7)

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[205] Laseter, 24.

[206] IBM Homepage, "Real-Time and Team Collaboration," <http://www-142.ibm.com/software/sw-lotus/lotus/offering2.nsf/wdocs/rttc> (accessed 20 November 2005).

[207] Heitkamp.

MAJCOM satisfaction from both the AF CIO and LGC perspectives; and (8) Total spend through AFWay. The total spend through AFWay was further divided into the percentage of spend by large and SBs, the number of orders by large and SBs, and the number and type of AFWay waivers.[208]

Unfortunately, the team lacked the human and organizational capital resources to reliably measure the percentage of standardized laptop and desktop computers purchased via AFWay, the average inventory age, and reduced TOC for laptop and desktop computers. The team has been able to capture snapshots of the three metrics. However, a good metric can be continuously tracked; it is not a snapshot of an organization at a single moment in time.[209]

c. Recommendations

1. Measure in dollars to produce the best benefits.

The commodity team must continue to develop a means to not only measure reductions in purchase price but also TOC savings. As mentioned previously, the team should work with industry experts as well as suppliers to identify cost drivers and develop detailed TOC models.

2. Use ESM tools to develop effective, reliable metrics.

To be effective and reliable, metrics must satisfy five key criteria. They are as follows: (1) Aligned with organizational goals and objectives; (2) Actionable and predictive; (3) Consistent; (4) Continuously tracked over time; and (5) Comparable to external benchmarks among a peer group or industry.[210] An ESM capability would not only provide access to accurate, real-time spend data but also enable the commodity team to develop and utilize metrics that satisfy the above five characteristics.

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[208] "CAMP Annex #1Briefing."

[209] Y. Lermusiaux, "Characteristics of a Good Metric," (2005), <http://www.ilogos.com/en/expertviews/articles/strategic/20030709_YL.html> (accessed 20 November 2005).

[210] Ibid.

7. Action Plan for Implementation

a. Successes

Transforming an organization to support a commodity sourcing strategy requires leadership from the top. Quite often, the necessary ingredients for change are simply too rare in most organizations unless top leadership takes a visible role in driving the change.[211] With that said, SAF/AQC and AF CIO fueled AFITCC's transformation by ensuring the commodity team possessed the organizational capabilities and appropriate leadership to succeed. As mentioned in the previous chapter, HQ SSG was selected to head AFITCC because it provided the IT integration, standardization, and enterprise-wide mission support for the AF.[212] Furthermore, SAF/AQC and AF CIO selected an innovative, charismatic leader to direct AFITCC.

The Director of the Council led the team in developing its vision, guiding principles, and strategic objectives, then empowered core team members and MAJCOM/Functional representatives to make decisions and implement solutions at the lowest possible level. In doing so, the Director convinced his subordinates, as well as much of the AF, the development and implementation of an effective commodity sourcing strategy could revolutionize the way the AF purchases COTS IT products and services.

Of course, one person alone cannot drive change AF-wide. However, by continually gaining support and increasing visibility for the commodity team, SAF/AQC, AF CIO, and motivated commodity team members have attracted others to the task. Many high-performing individuals have seen the opportunities and challenges afforded by the commodity council concept and jumped at the chance to be part of the transformation.

Besides strong leadership, the commodity team also encouraged candid communication among team members. To accomplish this, the team organized itself so

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[211] Laseter, 25.

[212] "News Release United States Air Force."

that its task interdependencies were reciprocal (i.e., team members must work with each other in order to produce a common product). This was effective during the desktop/laptop spiral because of the small size of the team along with its relative inexperience in developing a commodity sourcing strategy.

To communicate to the AF as a whole, the commodity team hired commercial consultants to develop a communication strategy.[213] The plan addressed the team's overarching strategic objectives as well as the specific desktop/laptop commodity strategy. It also identified key messages, target audiences, effective communication channels, and a time-phased plan of attack.[214] Finally, the commodity team relied on suppliers, MAJCOM/Functional representatives, AFITC, press coverage, and various site visits to disseminate its message.

b. Challenges

Such dramatic shifts in purchasing activities require very different skill sets from those traditionally expected in a purchasing organization.[215] Many of the original commodity team members lacked formal training in enhanced skills, such as strategic sourcing and change management. This meant the team had to overcome a significant learning curve before it could generate any substantial momentum.

Even after two years of operation, the commodity team has yet to clearly communicate its purpose and benefits to the entire AF. In fact, many organizations are unaware AFITCC even exists. This can only mean the team failed to execute the communication plan it developed during the desktop/laptop spiral. Until the entire AF embraces the need for a change to the commodity council concept, the team will continue to face an uphill battle in achieving maximum participation.

The commodity team did not include the local contracting organization in its initial spiral development. This led to miscommunication and poorly defined roles. A power struggle ensued, and the contracting office bitterly resisted implementation of the

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[213] Gaylord et al.

[214] "CAMP Annex #1Briefing."

strategy.[216] As a result of the above, sequential interdependence evolved (i.e., only one group could perform at a time), and the commodity team was unable to transfer its corporate knowledge to the contracting office.

During this phase, the commodity team began to understand the many differences between public and private organizations. The Government bureaucracy posed many significant challenges to the development and implementation of AFITCC, including but not limited to acquisition regulations, socioeconomic constraints, CICA requirements, multiple stakeholders, various regulatory agencies, and the inability to effectively recruit, select, train, reward, and discipline employees.

c. Recommendations

1. Initiate a prominent commodity council recruiting process.

Currently, there is no recruiting process in place. The research team recommends further enhancing the communication plan by including a recruiting component. For example, the commodity team could place advertisements on the Air Force Personnel Center website to attract potential AFITCC members. The team could also sponsor officers through Air Force Institute of Technology for a Master's Degree in Strategic Purchasing.

2. Elevate AFITCC's importance in the HQ SSG organizational structure.

To upgrade AFITCC's purchasing function, the organizational structure should be reconfigured so that AFITCC is aligned next to HQ SSG. As a result, decision-making authority will become much clearer, and the funding and approval processes will be more direct. This structural change will also send a message to all stakeholders conveying the strategic importance of AFITCC.

3. Involve the contracting organizations in the commodity strategy development process.

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[215] Laseter, 22.

[216] Priest.

Currently, the flow of work from AFITCC to the executing contracting organization is sequential. The commodity team must first develop and approve its desktop/laptop spiral before the contracting organization can execute it. Accordingly, it is highly recommended the commodity team move from sequential interdependence to reciprocal interdependence. To do so, the research team recommends creating a position within the commodity team for a contracting representative from the appropriate implementing contracting organization for each spiral. This position would be an additional duty, and the contracting representative would assist in developing and implementing the appropriate spiral. This would help to fill the gap between the AFITCC members that develop the spirals and the contracting professionals that implement them.

8. Sustainment

a. Successes

The commodity team's annual "AFITCC Roadmap Meeting" is one method to ensure the overarching strategy and individual spirals continue to be effective and responsive to changes in the internal and external environments. The meeting provides a tremendous opportunity for suppliers, MAJCOM/Functional representatives, and top leadership to share best practices, identify areas of improvement, and discuss recommendations. Additionally, it focuses on updating buying standards, affecting AF buying behaviors, forecasting technology surges, and identifying future AF needs.[217]

b. Challenges

The commodity team is unable to determine when it should shift its focus from driving down purchase price, to capturing reductions in TOC, to pursuing new commodity opportunities. For example, the team could continue to attempt to decrease the purchase price of desktop and laptop computers. However, in doing so, it would forego the opportunity cost associated with further developing its mobile telecommunications spiral. Because of its limited human capital resources, the team the team must focus its energy on those areas it can most significantly impact.

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[217] Gaylord et al.

The commodity team lacks significant physical, human, and organizational capital resources. For the team to maintain its success, it will require adequate resources. This means the addition of trained personnel to pursue new and update existing spirals. It also means additional funding to obtain critical enabling technologies. Finally, it means continued support from senior leadership and MAJCOM/Functional representatives.

c. Recommendations

1. Obtain maximum MAJCOM/Functional participation in the QEB process.

Consistent, top leadership support was absolutely critical to AFITCC's successful transformation. Unfortunately, senior civilian and military leadership rotate positions every two or three years. Consequently, the commodity team will inevitably endure a change in leadership. To ensure the team receives the support and resources it requires, it must achieve maximum participation from each of the MAJCOMs/Functionals via the QEB process. In order to obtain maximum participation, the commodity team must do a better job of communicating its mission, purpose, and benefits to the AF as a whole.

2. Develop a continuity database.

It is highly recommended the team establish procedures to manage turnover among core members and MAJCOM/Functional representatives. In order to ensure the extensive corporate knowledge obtained by the original commodity team members is not lost, the team should develop a continuity database. The database should not only document overarching and individual commodity strategies but also processes, job descriptions, training requirements, communication efforts, funding and manning requirements, and technological needs.

C. KEY RECOMMENDATIONS

Table 2 summarizes the key recommendations provided throughout the chapter. It is important to note each recommendation will require an investment in physical, human, and/or organizational capital resources (e.g., additional funding, manning, or training).

Table 2. Key Recommendations

Documentation of Spend	**Industry Analysis**
• Obtain an ESM capability • Improve the contract reporting database so that it collects information the commodity team can easily access and use	• Continue to use industry experts in areas where deficient • Develop industry maps of the supply chain
Cost and Performance Drivers	**Segmentation of Supplier Roles**
• Continue to evolve a TOC-modeling capability • Use a top-down methodology to model an organization's outside purchases • Use cost-based targeting to gain a better understanding of cost drivers and TOC • Continue to partner with private industry to identify cost drivers and develop TOC models	• Request specific proposals from suppliers about how the organizations might collaborate • Strengthen compliance with SB subcontracting plans • Enact policy so that commodity teams receive SB credit for SBs acting in a significant subcontracting role
Business Process Priorities	**Quantification of Opportunity**
• Integrate the supply web, leverage supplier innovation, and evolve a global supply base. • Develop effective supplier relationships based on knowledge of a supplier's competency, goal congruence, and mutual dependence • Adopt five enabling technologies that support a commodity sourcing strategy	• Measure in dollars to produce the best benefits • Use ESM tools to develop effective, reliable metrics
Action Plan for Implementation	**Sustainment**
• Initiate a prominent commodity council recruiting process • Elevate AFITCC's importance in the HQ SSG organizational structure • Involve the contracting organizations in the commodity strategy development process	• Obtain maximum MAJCOM/Functional participation in the QEB process • Develop a continuity database

D. COMPARISON WITH AIR FORCE AUDIT

Near the end of the research project, the Air Force Audit Agency (AFAA) completed a comprehensive review of AFITCC's operations. The audit was requested by the Director of the Council to determine if AF leadership had achieved its strategic objectives for AFITCC.[218] AFAA identified the following four areas of improvement: (1) Properly attribute cost savings to the QEB program; (2) Participate in the QEB program at all levels; (3) Properly manage waivers when deviating from the standard system configurations; (4) Achieve QEB SB goals.[219]

AFAA first noted the commodity team's lack of a formal cost savings measurement process resulted in the team understating its cost savings. Accordingly, the metrics used by the commodity team to measure cost savings required improvement. AFAA proposed the commodity team require a unified layout for each portion of the cost savings, document pricing data for each vendor participating in the QEB process, periodically review formulas and cross check tabulations, and document the rationale used to calculate metrics.[220]

AFAA also indicated AF installation personnel did not fully participate in the QEB program. Specifically, only 53 of the 303 AF installations (17 percent) regularly participated in the QEB process. By continuing to foster participation in the QEB process, the AF could save up to $325 million, through reduced unit costs, over the next six years. AFAA recommended the Warfighting Integration and Chief Information Officer (SAF/XC) be designated as the single Air Staff office with oversight and enforcement authority for the QEB program. Additionally, AFAA proposed SAF/XC formalize the QEB program under official AF guidance, establish substantial consequences for QEB non-participation, implement a formalized feedback mechanism, and develop and conduct QEB training.[221]

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[218] AFAA Audit, "Quarterly Enterprise Buy Process," Slideshow: 1 November 2005.

[219] Ibid.

[220] Ibid.

[221] Ibid.

Next, AFAA noticed AF personnel did not adequately manage waivers to deviate from the standard system configurations. In particular, one MAJCOM CIO issued a blanket waiver to bypass the QEB process entirely. AFAA suggested SAF/XC include QEB waiver procedures in the AF guidance recommended above and establish procedures to forward all waivers to the commodity team at least semi-annually.[222]

Finally, AFAA denoted the AF could not adequately assess SB participation. This was attributed to MAJCOMs either not submitting SB plans or submitting inadequate SB plans. AFAA advised the Director of Small and Disadvantaged Business Utilization, in coordination with SAF/XC, develop SB QEB procedures that require AF organizations to submit SB plans related to the QEB program, outline the steps to collect, track, and report SB desktop, laptop, and monitor purchases, and forward the data to AFITCC periodically for review and analysis.[223]

The audit verified many of the concerns the research team discussed throughout the chapter. The commodity team needs to do a better job of quantifying its results; the team must find an effective mechanism to communicate its purpose and benefits to the AF as a whole; and the team must continue to encourage SB participation. Most importantly, the audit confirmed AF top leadership's commitment to AFITCC's success. Management has already initiated corrective action to incorporate many of the prudent recommendations above.[224] It is important to note that each of the commodity councils will require similar commitment from senior leadership if they are going to be able to achieve similar results to AFITCC.

E. LIMITATIONS & AREAS OF CONCERN

All research projects are subject to limitations and areas of concern. For the purpose of this project, the most significant limitations and concerns affecting this study included: the impracticality to establish external validity, the lack of participation by a critical member during the group interview, the inability to conduct a follow-up interview

[222] AFAA Audit.

[223] Ibid.

[224] Ibid.

with one of the original commodity team members, the failure to respond to questionnaires sent by the research team to MAJCOM/Functional representatives, and the limited amount of time to coordinate and conduct the study.

Establishing external validity involves replicating findings in subsequent, similar studies.[225] It is likely many of the factors that led to the successful development and implementation of AFITCC would also lead to the successful development and implementation of other commodity councils within the public domain. However, before that generalization can be accepted, it must be tested through replication of the research team's findings in a second or third public-oriented commodity council. Since the research team is subject to time constraints, replicating its findings by conducting a second case study is impractical.

The research team initially aspired to conduct a group interview with all of the original AFITCC members. Unfortunately, due to permanent changes of station and last-minute schedule conflicts, the group interview consisted of three original AFITCC members, one current member, and the three members of the research team. Generally, the ideal group interview is composed of six to ten individuals, excluding the facilitator(s). When interviewing smaller groups, one or two individuals tend to dominate the discussion.[226] The research team prevented this phenomenon by ensuring everyone had an opportunity to speak as well as conducting follow-up interviews with individual commodity team members.

During the site visit to AFITCC, the research team was unable to conduct a follow-up interview with the Director of the Council. This was due to the limited amount of time to conduct on-site interviews, conflicting schedules, and other demands to which the Director had to attend. It is important to note, however, the responses received from the Director closely corresponded with those received during the group interview. As a result, the research team did not believe a follow-up interview was absolutely necessary.

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[225] Yin.

[226] Ibid.

To further strengthen the validity and reliability of the group and individual interviews, the research team sent a questionnaire to six MAJCOM/Functional representatives. The questionnaire contained the same questions that were presented to commodity team members during the site visit. Unfortunately, none of the questionnaires were returned. This may be due to the research team's short suspense date.

F. FUTURE RESEARCH

AFITCC's incredible success has carved a path for future AF commodity councils to follow. However, many issues related to the development and implementations of commodity councils throughout the AF remain unresolved. These issues include developing a means to measure TOC, improving the contract reporting database, exploring the full range of ESM capabilities, implementing DoD-wide commodity councils, and conducting additional research on other existing AF commodity councils.

One potential area for future research is the development of an improved method to measure TOC. Many organizations, including AFITCC, have yet to evolve a TOC-modeling capability to their desired level.[227] The importance of modeling TOC is common among all commodity strategies. Few, if any, decisions are based merely on a product's purchase price. The results of this study could tremendously impact the AF's ability to identify, measure, and decrease life-cycle costs.

Further research on the usefulness of the contract reporting database to commodity councils should be conducted. Recent studies have found the data collected by the contract reporting database to be inadequate in "fully characterizing purchases."[228] Moreover, manual input of data has contributed to increased errors.[229] Future commodity councils would greatly benefit from an improved DD 350 and contract reporting database that meet the specific demands of strategic sourcing.

To compliment the DD 350 research, a deeper analysis of ESM capability should be conducted. ESM provides the enterprise-wide visibility and control organizations

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[227] Laseter, 56.

[228] Dixon et al.

need to efficiently manage and leverage spend.[230] Several companies offer commercially-available ESM solutions. However, predefined procedures mandated by such software will not likely match Government regulations and policies, thus forcing commodity councils to modify the system.[231] Consequently, future research is required to ascertain the extent of the modifications.

Another area for potential research is the feasibility of instituting DoD-wide commodity councils. To date, AFITCC has the saved the AF millions of dollars. As word spreads and its use increases, AFITCC could potentially save the AF $325 million over the next six years.[232] Based on the savings experienced by a single commodity council in a single service, research should be conducted to explore the benefits and challenges associated with the development and implementation of DoD commodity councils.

Finally, there is no doubt the AF sees tremendous opportunity in the application of commodity strategies. Besides AFITCC, the AF also plans to develop and implement commodity councils for force protection and medical services as well as aircraft accessories, engines, structures, instruments, communications electronics, landing gears, secondary power systems, and support equipment.[233] Case studies on any of the aforementioned commodity councils should be conducted to identify common success factors, share best practices, and advertise benefits.

G. CHAPTER SUMMARY

This chapter analyzed the results and findings presented in the previous chapter. A deeper analysis of Laseter's "Balanced Sourcing" approach led to the identification of the successes and challenges the commodity team encountered during the development and implementation of the commodity sourcing strategy. Based on the lessons learned,

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[229] Gaylord et al.

[230] Ariba Spend Management Solutions.

[231] Laseter, 24.

[232] AFAA Audit.

[233] E. Koenig. & T. Wells, "AFMC Sustainment Transformation," Slideshow: 2005.

recommendations were provided to benefit future development, implementation, and sustainment of commodity councils throughout the AF and DoD. As a final note, limitations of the research were discussed and recommendations for future research were provided.

APPENDIX. GROUP INTERVIEW QUESTIONS

DOCUMENTATION OF SPEND

1. Along which dimensions did you conduct a spend analysis (i.e., business unit, buying location, supplier, subcommodity)?

2. How did you gather the information for the spend analysis?

3. How did you address the total ownership cost of the commodity?

4. What went right and what went wrong?

INDUSTRY ANALYSIS

1. What factors did you consider in conducting an industry analysis?

2. Which of those factors did you consider most critical?

3. What went right and what went wrong?

EXPLANATION OF COST & PERFORMANCE DRIVERS

1. What cost drivers and performance metrics did you consider most critical in developing your commodity strategy?

2. How did you evaluate/incorporate those cost drivers and performance metrics?

    - Did you conduct market research (i.e., conduct site visits, review past performance, map the manufacturing process)? If so, how?

3. How did you identify/determine the top three configurations for the purchase of desktops and laptops?

    - Did you encounter a significant amount of resistance from leadership, customers, etc? Please explain.

4. What went right and what went wrong?

SEGMENTATION OF SUPPLIER ROLES

1. How did you determine the type of suppliers needed and the roles the suppliers should play?

- Were you purchasing supplies alone or supplies and service agreements? Please explain.

2. What went right and what went wrong?

BUSINESS PROCESS PRIORITIES

1. How were information technology products purchased prior to the implementation of the commodity council?

2. How did you transform from a traditional purchasing function to a forward leaning strategic sourcing agency?

3. What were the critical areas for supplier integration?

4. How did supplier teaming contribute to your success?

5. What new technologies did you use to improve your processes?

6. What went right and what went wrong?

QUANTIFICATION OF OPPORTUNITY

1. In addition to cost savings, how do you define success within your organization (e.g., delivery times, customer satisfaction, socioeconomic goals, satisfied partners, satisfied employees, etc.)?

2. How did/do you quantify benefits other than costs?

3. What went right and what went wrong?

ACTION PLAN FOR IMPLEMENTATION

1. How did you organize your resources, activities, and milestones to fit your strategic direction?

2. How did you communicate your strategic direction throughout your organization as well as your supply chain?

3. How did you change the organizational culture to support the new strategic direction?

4. What went right and what went wrong?

SUSTAINMENT

1. From what we have read, you have been very successful, but how do you plan to maintain your success?

2. Can you continue to drive down costs? How might you accomplish this?

3. What went right and what went wrong?

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LIST OF REFERENCES

AFAA Audit. "Quarterly Enterprise Buy Process." Slideshow: 1 November 2005.

Air Force Link. "Council Saves Major Commands Money." 12 September 2003. <http://www.af.mil/news/story.asp?storyID=123006166> (accessed 18 November 2005).

"Air Force Policy Directive 63-19: Commodity Councils." Washington, D.C., 2004.

Ammer, D. "Is Your Purchasing Department a Good Buy?" *Harvard Business Review*, (1974).

"An Overview of AFWay." <http://www.fcw.com/vendorsolutions/ossw/overview.asp> (accessed 27 November 2005).

Ariba Spend Management Solutions. *Frequently Asked Questions*. <http://www.ariba.com/solutions/spendmanagement_FAQ.cfm> (accessed 18 November 2005).

Avery, S. "Cessna Soars." *Purchasing*, (2003).

Beer, M. & Nohria, N. "Cracking the Code of Change." *Harvard Business Review*, (1990).

Beer, M., Eisenstat, R.A. & Spector, B. "Why Change Programs Don't Produce Change." *Harvard Business Review*, (1990).

Bridges, W. *Managing Transitions*. Cambridge, MA: Perseus Group, 1980.

"CAMP Annex #1 Briefing: Desktop/Laptop/Server Replacement Strategy." Slideshow: 14 October 2003.

Carter, J. & Narasimhan, R. "Is purchasing really strategic?" *International Journal of Purchasing and Materials Management*, (1996).

Carter, J. "Development of Supply Strategies." In *The Purchasing Handbook: A Guide for the Purchasing and Supply Professional*. Cavinato, J., & Kauffman, R. (Eds.). New York: McGraw Hill, 2000.

Caterinicchia, D. "Air Force Launches IT Purchasing Site." 11 March 2002. <http://64.233.167.104/search?q=cache:Rmcrqrgzd_sJ:www.fcw.com/article88334+%22Information+Processing+Management+System%22+and+AFWAY&hl=en> (accessed 27 November 2005).

Dixon, L. et al. "An Assessment of Air Force Data on Contract Expenditures." *Rand Project Air Force*. Santa Monica, California: RAND Corporation, 2005.

"DoD Inspector General Starts Transformation Process." Department of Defense. 10 September 2002. <http://www.defense.gov/releases/2002/b09102002_bt461-02.html> (accessed 19 November 2005).

Duck, J. "Managing Change: The Art of Balancing." *Harvard Business Review*, (2000).

Farmer, D. "Developing Purchasing Strategies." *Journal of Purchasing and Materials Management*, (1978).

Federal Acquisition Regulation. "Subpart 19.7- The Small Business Subcontracting Program." <http://www.arnet.gov/far/current/html/Subpart%2019_7.html> (accessed 30 November 2005).

Field, A.M. "New thinking at IBM." *Journal of Commerce*, (2005).

Fray, J. & Fontana, A. "The Group Interview and Social Research." In *Successful Focus Groups: Advancing the State of the Art*. D. Morgan (ed.). New York: Sage Publications, 1993.

Gabbard, E. "Strategic Sourcing: Critical Elements and Keys to Success." Paper presented at Institute of Supply Management International Conference, Scottsdale, Arizona, 2004. <http://www.ism.ws/ConfPastandOnlineDaily/Files/Apr04/HA-Gabbard.pdf> (accessed 18 November 2005).

Gaylord, T. Interview by authors. Tape Recording. Air Force Information Technology Commodity Council. Gunter Annex, Maxwell AFB, Montgomery, Alabama. 14 September 2005.

Gaylord, T., Priest, D., Woods, S., & Smith, S. Interview by authors. Tape Recording. Air Force Information Technology Commodity Council. Gunter Annex, Maxwell AFB, Montgomery, Alabama. 13 September 2005.

General Accounting Office. "Small Business Subcontracting Report Validation Can Be Improved." GAO-02-166R. Washington D.C., December 13, 2001.

Hammer, M. and Champy, J. *Reengineering the corporation: A Manifesto for Business Revolution*. Great Britain: Nicholas Brealey Publishing, 1999.

Heitkamp, K. "IT Commodity Acquisition Management Plan (CAMP)." Slideshow: 14 October 2003.

Heitkamp, K. Interview by authors. Tape Recording. Air Force Information Technology Commodity Council. Gunter Annex, Maxwell AFB, Montgomery, AL. 15 September 2005.

Hiatt, J. "Change Management Learning Center" 1996-2005. <http://www.change-management.com> (accessed 20 November 2005).

HQ Operations and Sustainment Systems Group. "Buying Tools." 25 February 2005. <https://www.gunter.af.mil/aq/aqt/afitcc/BuyingTools.aspx> (accessed 20 November 2005).

HQ Operations and Sustainment Systems Group. "Small Business Info." 25 February 2005. <https://www.gunter.af.mil/aq/aqt/afitcc/small_business_info.aspx> (accessed 20 November 2005).

IBM Homepage. "Real-Time and Team Collaboration." <http://www-142.ibm.com/software/sw-lotus/lotus/offering2.nsf/wdocs/rttc> (accessed 20 November 2005).

"Information Technology Commodity Council (ITCC) Policy Memorandum 04-01, Mandatory Desktop and Laptop Strategy." AF CIO Policy Letter. 13 July 2004.

Kanter, R., Stein, B, & Jick, T. *The Challenge of Organizational Change*. New York: Free Press, 1992.

Kelly, A. "Commodity Council Implementation and Operations." AFLMA Final Report No. LC200328804. Maxwell AFB AL: Air Force Logistics Management Agency, 29. December 2003. <http://www.aflma.hq.af.mil/lgc/lgccomplete.html> (accessed 18 November 2005).

Ketera. "On Demand Spend Management Solutions." 2005. <http://www.ketera.com> (accessed 20 November 2005).

Knodel, J. "The Design and Analysis of Focus Group Studies: A Practical Approach." In *Successful Focus Groups: Advancing the State of the Art*. D. Morgan (ed.). New York: Sage Publications, 1993.

Koenig, E. & Wells, T. "AFMC Sustainment Transformation." Slideshow: 2005.

Kotter, J.P. "Leading Change: Why Transformation Efforts Fail." *Harvard Business Review*, (2000).

Kraljic, P. "Purchasing must become supply management." *Harvard Business Review*, (1983).

Laseter, T. M. *Balanced Sourcing: Cooperation and Competition in Supplier Relationships*. San Francisco: Josey-Bass Publishers, 1998.

Lermusiaux, Y. "Characteristics of a Good Metric." 2005. <http://www.ilogos.com/en/expertviews/articles/strategic/20030709_YL.html> (accessed 20 November 2005).

Monczka, R. M., Trent, R. J., & Handfield, R. B. *Purchasing and supply chain management*, 3d ed., Mason, Ohio: Thomson/South-Western, 2005.

Morgan, David L. *Focus Groups as Qualitative Research*. New York: Sage Publications, 1988.

"News Release United States Air Force." Release No. 03-05-21. Release date: May 21.

Office of Federal Procurement Policy. "Contract Bundling: A Strategy for Increasing Federal Contracting Opportunities for Small Business." October 2002.

Porter, M. "How Competitive Forces Shape Strategy." *Harvard Business Review*, (1997).

Priest, D. Interview by authors. Tape Recording. Air Force Information Technology Commodity Council. Gunter Annex, Maxwell AFB, Montgomery, Alabama. 14 September 2005.

Raedels, A. et al. (eds). *C.P.M. Study Guide,* 7 ed. Tempe, Arizona: Institute of Supply Management, 2001.

Reed, T.S., Bowman, D.E., & Knipper, M.E. "The Challenge of Bringing Industry Best Practices to Public Procurement: Strategic Sourcing and Commodity Councils." In *Challenges in Public Procurement: An International Perspective*. Thai, A. et al. (Eds.). Boca Raton, Florida: PrAcademic Press, 2005.

Rendon, R. "Commodity Sourcing Strategies: Supply Management in Action." No. NPS-CM-05-003. Monterey, California: Naval Postgraduate School, 2005.

Roberts, N. Unpublished note on Organizational Systems Framework, 2005.

Schwinn, D. *Quality Advisor*. 2003. <http://www.qualityadvisor.com/library/six_sigma/deming_six_sigma3.htm> (accessed 18 November 2005).

Seidel, J. & Clark, J. "The Ethnograph: A Computer Program for the Analysis of Qualitative Data." *Qualitative Sociology*, 1984.

Smock, D.A. "Best practices past big blue three years later." *Purchasing*, (2002).

Stime, B. "Computer Life Cycles; Holding Up Moore's Law." September 2005. <http://wcco.com/techresources/local_story_263171658.html> (accessed 18 November 2005).

Temin, T. "Air Force Council Saves On First PC Commodity Buy." 27 August 2003. http://www.gcn.com/vol1_no1/daily-updates/23299-1.html (accessed 20 November 2005).

Williams, C. “Senior Leader Perspective Briefing.” Slideshow: 28 October 2005.

Yin, R. *Case study research design and methods*, 2 ed., Thousand Oaks: Sage Publications, 2003.

Zikmund, W. *Business research methods*, 7 ed., Mason, Ohio: Thomson/South-Western, 2003.

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